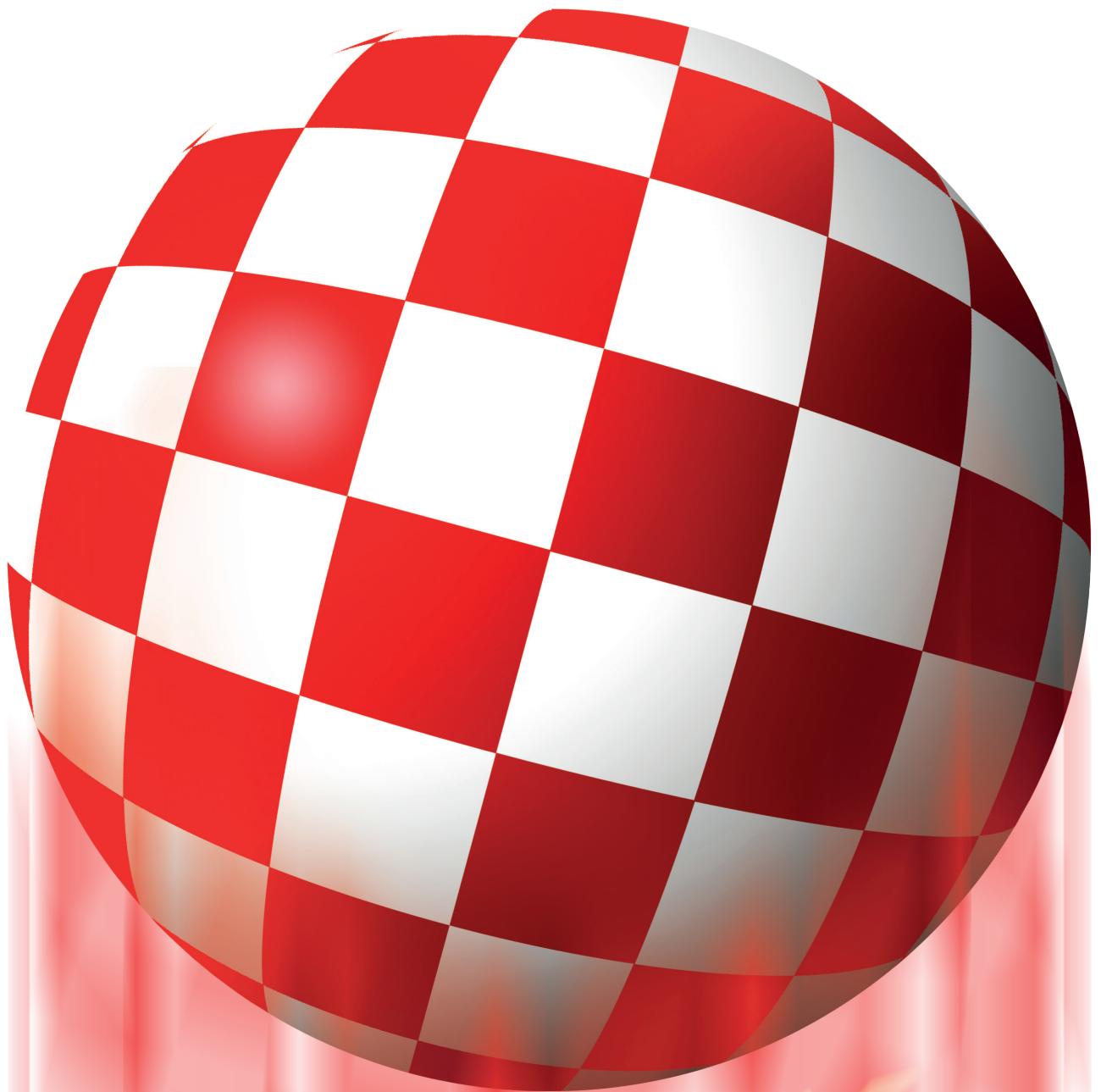




The Story of the
Commodore
AMIGA
In Pixels_

Chris Wilkins
Roger M. Kean





GOING!



v1.3

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Commodore

AMIGA

In Pixels_

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FUSIONRETROBOOKS

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Thanks so much guys.

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Foreword by David Pleasance

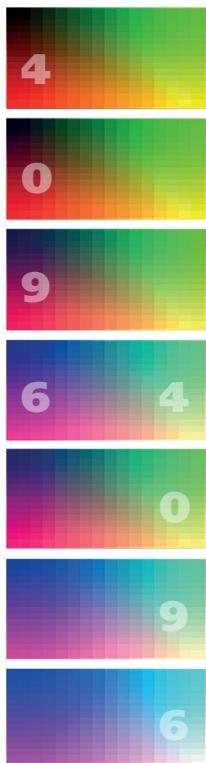
I must say that I felt incredibly honoured when I was asked to write this foreword and also delighted, for two reasons. First, I am a huge fan of publisher Chris Wilkins' work. He has this amazing ability to capture the spirit of his books' subjects – be it software, developer or hardware – and presents the content in a way that all readers easily relate to, digest and thoroughly enjoy. This in itself is a profound and unique talent.

Second, of course not only is the Amiga a computer around which I centred an immense part of my career but the Commodore Amiga also changed so many people's lives considerably, all round the globe.

For me, when the first Amiga – the A1000 – was launched in 1985, it really was a bitter-sweet moment, and why was that? At the time my responsibility within Commodore Business Machines UK Ltd was National Sales Manager of the consumer products division so when Commodore positioned the Amiga 1000 as a business and productivity machine it meant it was not within my portfolio.

Grrrrrr...

Can you imagine how that felt? To have a computer with revolutionary capabilities within touching reach but unable to market it, sell it, or even show



it to my biggest customers such as Dixons, Comet, Currys, Laskys and the rest. It was very frustrating, particularly at computer shows and other similar events, which we attended regularly.

I remember vividly the occasion when we were showing off the A1000 for the very first time at the Personal Computer World show, London's highest profile annual event, which was held in September at Olympia. We had a large screen on which we displayed thirty-two different windows and we had different programs running in each simultaneously! Admittedly there were some fairly modest programs among them, but it was nevertheless a truly jaw-dropping demonstration, and it made us the star exhibit of the show.

Well, one day my wish was granted in the form of the Amiga 500. At last a computer with all the same incredible features (in fact more) than its big brother but at a price we could offer to the mass market.

Many things came into play over the next period, including the launch of the *Batman* Pack in association with Ocean, which elevated the A500's profile. The resulting sales grew to an incredible level and we were able to maintain such substantial sales on a regular basis.

The next model to be released was the Amiga 2000, closely followed by the awesome A3000 and A3000T.
(Eventually, I set myself up a professional music recording studio at the heart of which I had an A4000 controlling all the equipment, a task it performed flawlessly.)

Within the consumer products division we launched a few models of Amiga, but the Amiga 1200 was by far and away the most popular and successful. It cemented our position as the number one home computer product of the 1990s.

So here we are so many years later and the Amiga has spawned a generation of computer savvy individuals, many of whom are now in high-profile positions in leading corporations around the globe. I am certain you will thoroughly appreciate *The Story of the Commodore Amiga in Pixels* and it will stir up lots of your warmest memories. Enjoy!



Commodore
A-500 Plus

Amiga – ‘the first aesthetically satisfying PC’

The History...

by Andrew Fisher

additional reporting: Roger M. Kean

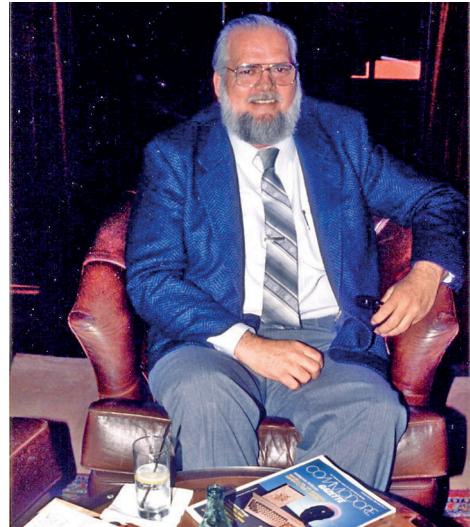
Although earlier computers existed in isolation from the world, requiring their visuals and sound to be generated and live only within their memory, the Amiga was of the world, able to interface with it in all its rich analog glory.

So wrote Jimmy Maher in *The Future Was Here: The Commodore Amiga* (MIT Press, 2012). But bringing that future to the then present, from idea to market, the story of the Amiga was a long and twisting road, intertwining two of the biggest computer companies of the 1980s – Commodore and Atari.

It is the story of unique ideas, management failings and the rapid growth of both the gaming industry and the everyday use of computers. From bedroom to office, from business to TV studio, the Amiga had a loyal following.

Jay Glen Miner at the Amiga Developers Conference in Paris, February 1990.

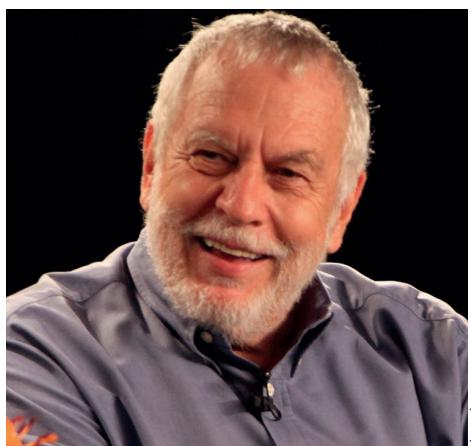
Nolan Bushnell, below, in a 1980s television interview and, right, in 2013.



Michael C. Battilana & Cianfar Italia srl

Over thirty years later the computer and its custom hardware live on in emulation.

At the heart of the Amiga story is the man credited as ‘the father of the Amiga’, Jay Glen Miner (1931–1994). After a background in electronics with the US Coastguard and a decade in industry designing chips for calculators and computers, Miner joined Nolan Bushnell’s fledgling Atari, Inc. in 1974. Once settled in – Jay regularly went to work with his dog Mitchy (she even had her own ID badge) – he was tasked with developing a chipset for the new Atari Video Computer System or vcs, later known as the Atari 2600. A vital Miner-designed component of the 2600, the TIA (Television Interface Adapter) was the machine’s graphic hardware. As

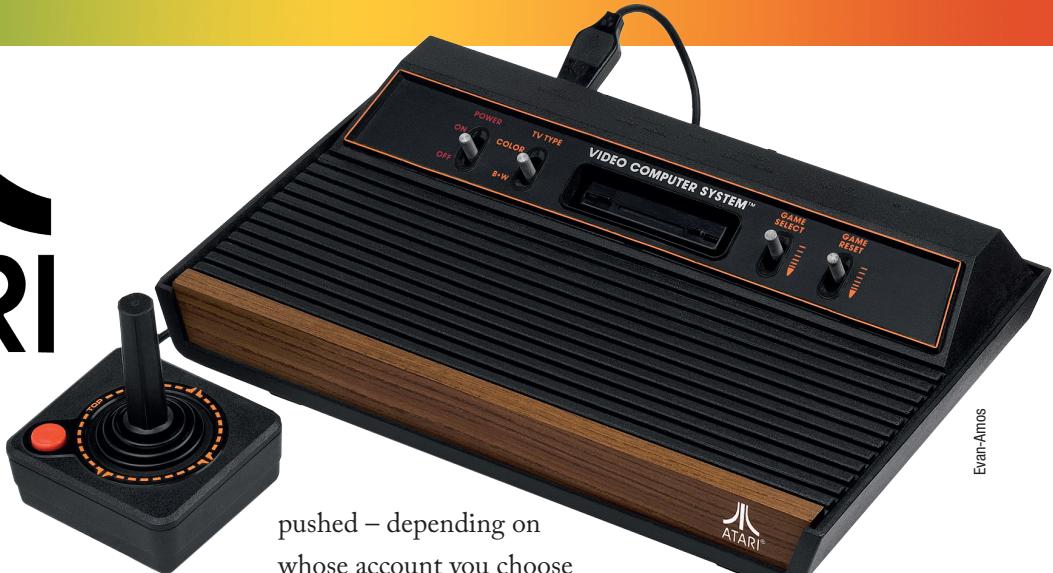




design progressed, it became clear to Bushnell that his pockets lacked the financial depth required to market what he was convinced would be a big hit and sought outside investors. In 1976 he sold out to Warner Communications while remaining CEO of the company. With the capital injection from Warner, Atari released the VCS in August 1977 to widespread acclaim.

On completing his work on the VCS, Miner began work on Atari's first 8-bit personal computers, which would debut in 1980. He directed designs for the ANTIC (Alphanumeric Television Interface Controller) and CTIA (Color Television Interface Adaptor) chips found in the Atari 800 and 400 models.

Disagreements over the company's future direction grew increasingly fractious between Bushnell and his new bosses in New York, and particularly with Ray Kassar who Warner Communication had hired as president of Atari's consumer division. After a particularly vicious argument at the end of 1978 Bushnell either jumped or was



Evan-Amos

pushed – depending on whose account you choose to believe. His departure marked a growing dissatisfaction towards the management among the Atari staff. Kassar had been a vice-president of the world's largest textile company — staff

"Kassar is said to have retorted that the programmers were 'prima donna towel designers'."

dubbed him the 'towel czar' and when he became aware of it, Kassar is said to have retorted that the programmers were 'prima donna towel designers'. Kassar knew nothing about electronics development and everything about marketing. The anger generated by his blank refusal to pay out royalties was further exacerbated through a financial sleight of hand. By 1979 Atari was 'rolling in money' through sales of millions of 2600s and games, but according to Miner, Warner decided to write off all the development costs of the first year of production, which resulted in such a small profit it didn't trigger a



Raymond Edward Kassar, accused of running Atari into the ground, but Warner Communications was as culpable in the scrabble for sales at the expense of quality.



Larry Kaplan above and right, programming at Activision. Below: from the same 1981 Activision Corporate commercial David Crane, Larry Kaplan, Bob Whitehead and Alan Miller.

pay out of previously promised bonuses to the engineers and programmers. Among them was Larry Kaplan, chief programmer on the 8-bit development who had joined Atari in 1976. He'd had enough by August 1979 and left to go and co-found Activision along with colleagues David Crane (*Pitfall!*, *Laser Blast*), Alan Miller (*Starmaster*, *Robot Tank*), and Bob Whitehead (*Skiing*, *Chopper Command*).



ACTIVISION

'Activision! Bringing you the most creative and original home video games!' shouted the 1982 corporate promotional video, but Larry Kaplan was soon to be reunited with Jay Miner in a new venture.

In a 1988 interview Jay Miner, left behind temporarily, said that this expected defection 'was the beginning of the end for the old Atari'. Nevertheless he plugged away promoting the development of an advanced 68000 machine to compete with Apple, but Warner and Kassar had no appetite for it, insisting on continued use of the dated 6502 CPU: 'So I quit, as did nearly all the rest of the engineers and programmers.'



Musical chairs in software land

The Amiga would be conceived and born amid the turmoil subsequently dubbed the North American video game crash of 1983. The Japanese called the crash 'Atari Shock' and in truth Atari was one of the biggest culprits, as Miner claimed. 'Atari started to produce a bunch of junk cartridges, thinking that the public would buy anything.' In less than two years revenues of the companies involved in the market collapsed by almost 97% from \$3.2 billion in 1983 to \$100 million.

On leaving Atari, Miner spent three years at a small technology company called Zimast developing microprocessor-controlled heart pacemakers for health company Intermedics (getting co-patents on two devices). It was at Zimast that Larry Kaplan came back into the frame.

As they often do, memories differ slightly. Miner recalled that Kaplan phoned him to say he was unhappy with Activision and 'did I know anybody with money who could help him start a new company'.

From Larry Kaplan's perspective his contact with Miner came because of a consortium that had approached Kaplan about wanting to invest in a new video game company and whether Jay would be interested to come in with him. The investors included a Texan oil baron and three 'dentists from Florida'; the Texan had interests in the sale of pacemaker chips, which is how he knew Zimast.

In a later interview with Scott Stilphen, Kaplan cited his main reason for leaving Activision in June 1982 as 'to start a game hardware company... to build a replacement for the VCS, since no one had done anything comparable. I had hooked up with Jay Miner and Doug Neubauer [designer of the 1979 *Star Raiders* and later *Solaris* in 1986] and an investor involved with Jay Miner's company.'

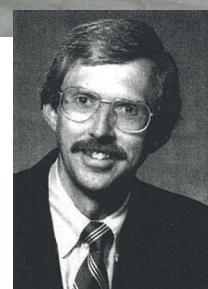
In Jay Miner's recall he introduced Kaplan to his Zimast boss, Bert Braddock, who knew people with money, like the Texan oilman, and Braddock set them up with a business plan, small premises and a CEO in the form of vice-president of marketing at Tonka Toys, Dave Morse (1943–2007). Morse and Kaplan set up in September 1982 as Hi-Toro (hi-tech and Texan sounding) at 3350 Scott Boulevard, Santa Clara. 'Larry was going to design

the games, I was going to design the chips [at Zimast] and Zimast was going to build the chips,' Miner said. It didn't quite work out that way, however. Kaplan's involvement was to prove short-lived. On receiving an offer from Ray Kassar late in 1982 to



return to Atari as vice-president of the VCS software group and because 'things weren't going fast enough for Larry', Kaplan bailed. Morse asked Miner to take Kaplan's place as chief engineer and vice president of Hi-Toro, which meant his leaving Zimast.

Even without Larry Kaplan, the investors still wanted their game company...but they also wanted a return on their investment. And that meant games and a new video games machine. What Miner wanted was a new super computer based around the 68000 CPU. His strategy was to build a machine that could be 'sold in a stripped down, low-cost version for video games,' while ensuring it was also 'unlimited in its expandability as a high-level home personal computer'.



From Tonka Toys to Hi-Toro, Dave Morse set up the new tech development company in modest premises at 3350 Scott Boulevard, Santa Clara, above.



THE POWER SYSTEM™ AMIGA

LOOK MA! NO HANDS!
The Joyboard 'Power Body Control' aimed to bring a new physicality to games playing. It was ahead of its time, but the innovation failed to find the wide sales Hi-Toro hoped for through a lack of software support.

Off Your Rocker drew inspiration from *Simon*, the electronic memory game invented by Ralph H. Baer and Howard J. Morrison, in which the player has to repeat a series of tones and lights.



Hi-Toro's first efforts at generating revenue were aimed at expanding the Atari console Jay Miner admired through peripherals like joysticks. The Joyboard was an unusual and very physical add-on which the player controlled standing balanced on top, and which can be seen as an ancestor of the Wii Balance Board and an example of Miner's forward thinking. Leaning in a direction activated four directional switches, which became inputs for the

console. A standard joystick could be plugged into the device if needed for extra input. The peripherals already carried the Amiga branding, which came about when it was discovered that a Japanese lawn mower company had the name Hi-Toro. Dave Morse chose Amiga – 'female friend' – for the new designation and soon after the company was renamed Amiga Corporation.



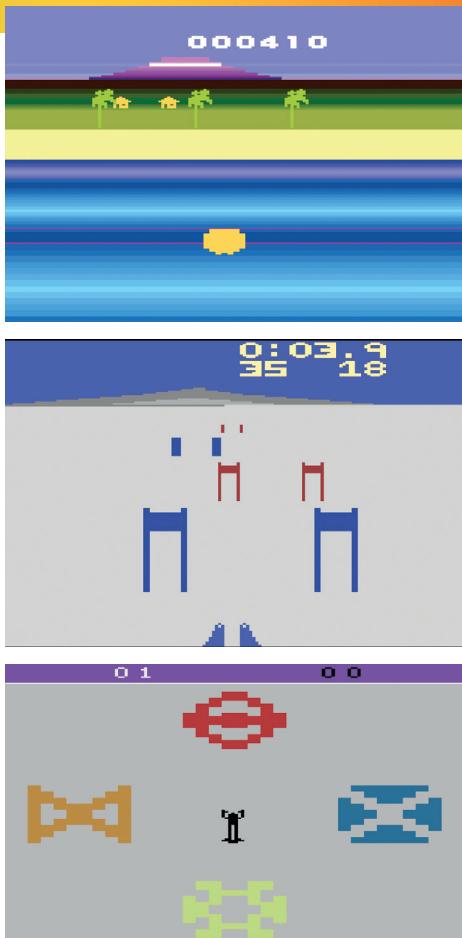
The Joyboard needed games that made best use of its capabilities, but they were thin on the ground. Only three were developed. *Mogul Maniac*, a skiing game, went on sale packaged with the Joyboard. *Off Your Rocker* – described as a 'simple game and lots of fun to play' – had one to four players repeating colours and patterns 'Rockin' Rollie' created on screen by leaning this way and that on the Joyboard, although it was primarily designed to be played using a joystick. It was eventually manufactured and sold by Pleasant Valley Video Company.



Amiga never released the unfinished *Surf's Up* game, apparently designed for the Joyboard.

Miner's dual-development strategy in effect was to divide Hi-Toro into two units under the leadership of Morse leading a recruited team of marketers for the video games business and joystick, Joyboard and game carts; Miner to head up chip design for his new computer. Following on from a tradition started at Atari, he usually named development systems after women and codenamed the new platform after his CEO's wife, Lorraine Morse.

For Lorraine, Miner came up with innovative new designs for the custom chips centred – at last! – around a Motorola 68000 processor. This was a genuine 16-bit advancement on the chips contained in other consoles and computers, with three custom chips supporting the main processor (*see side panel on the following page*). The Joyboard found an entirely unpredicted role in Lorraine's conception. Developing this new technology was not easy. To help them relax after another crash, the engineers took



Left: *Surf's Up* title screen, displaying Amiga-branding, and the 'Malibu' section of the Joyboard game that was never completed.

Left: frantic skiing with *Mogul Maniac*, packaged with the Joyboard.

Below, a screen from *Off Your Rocker*, which was eventually marketed by another company.

to sitting in the Lotus position on a Joyboard. The aim was to stay balanced for as long as possible. This became known as 'Guru Meditation' and the name would eventually find its way into the error message text the Amiga generated when it crashed...

Software Failure. Press left mouse button to continue.
Guru Meditation #00000025.65045338

The infamous Guru Meditation error and, like a metallic centipede, the groundbreaking Motorola 68000 processor.



Chips for Lorraine

Below: Wire-wrapped implementation of the Amiga custom chipset from an original Lorraine prototype. Photo by Eben Upton

Continuing the Atari tradition each of the custom chips had a female name.

Agnus (contraction from Address Generator Units): controlled how the processor and the other chips accessed



Below: the flickery rolling artefact caused when a display is not synchronised with the video camera recording it. The Amiga avoided this with the Agnus chip.

memory, synchronised to the display output. The ‘blitter’ (bit-block fast transfer of data without the intervention of the processor) allowed Agnus to move large areas of the screen display quickly.

‘I read about blitters in one of the



computer magazines and this seemed the ideal low cost way to improve animation such as flight simulators,’ Miner said.

While the ‘copper’ (co-processor) allowed changes in graphic output as the screen was refreshed. Agnus also had the ability to synchronise the display output with an external signal, which made the Amiga ideal for generating graphics for use on TV by avoiding the flicker effect often seen on monitors or TV screens in studio situations.

Daphne (later renamed Denise, a contraction from Display Enabler): was responsible for handling the graphics, both the background modes and hardware sprites. Working with the copper and blitter, it allowed rapid changing between modes and higher numbers of sprites on-screen. Denise also handled inputs from the mouse and joysticks.

Paula (Ports, Audio, UART and Logic, and also the name of a designer’s girlfriend): contained the sound functions, four channels capable of playing 8-bit PCM samples. Paula also acted as the floppy disk controller and read data from the serial I/O port. This gave access to many different disk formats, as well as the possibility of reading MIDI and other signals.

The Amiga chipset underwent several revisions. Here are the key differences and the changes in chip names.

Prototype (Lorraine)

Portia: 4-channel 8-bit sampling sound output and disk controller

Agnus: memory access, blitter and copper

Daphne/Denise: graphics chip, mouse and joystick handler

Motorola 68000 running @ 7.14 mhz (NTSC) / 7.09 mhz (PAL)

Original chipset (ocs)

Paula (replaced Portia)

Agnus*

Denise

Motorola 68000

*(The later Fat Agnus chip was cheaper to produce but identical in operation. Fatter Agnus could address up to 1MB of Chip RAM. Both were pin-compatible with the original.)

Enhanced chipset (ecs)

Paula (unchanged)

Super Agnus: up to 2MB of Chip RAM

Hires Denise: new hi-res modes (up to 1280x256), limited to 4 colours

Motorola 68000

Advanced Graphic Architecture (AGA)*

Paula (unchanged)

Lisa (replaced Agnus)

Alice (replaced Denise: more colours (256 from 16 million), higher resolution (up to 1440x580), faster 32-bit memory access

Motorola 68EC020 @ 14.28 mhz (NTSC) / 14.18 mhz (PAL)

Optional maths co-processor

*Known as Advanced Architecture (AA) in the USA, renamed in Europe to avoid confusion with the UK's Automobile Association.

Amiga Advanced Architecture (AAA)

Work on AAA started in 1988 but was never completed; it was designed to be compatible with AGA.

Mary (replaced Paula): with 8 voices of 16-bit sampling

Andrea (replaced Agnus/Lisa: with 32-bit blitter and copper

Linda (replaced Lisa): line-buffering chip for resolutions up to 1280x1024

Monica: new chip provided ReTargetable Graphics mode



The Denise and Paula chips in the ocs.

Hombre

Hombre would not have been backwards compatible with earlier Amiga software. Two chips – the System Controller chip and Display Controller chip – would have replaced the Amiga's custom chips.

Boot it

The Amiga operating system should actually be considered in three separate parts. The Kickstart section is responsible for starting the machine and putting the basic functions into memory. This includes Exec, the 'microkernel' that allows for multitasking. The user is then prompted for a disk from which to boot. This can contain the Workbench (the graphical interface) or a custom boot disk, as used by many games and utilities. During this boot process the remainder of the operating system is loaded into memory or accessed from disk as required. Advanced users can drop to the CLI (Command Line Interface) to enter commands directly.

Disk operations were handled by Paula and Amiga dos. The original plans were for a complex system designed to work well with multitasking, known as caos (Commodore Amiga Operating System). In the end, its slow pace of development left Commodore needing a faster solution. TripOS, designed by Doctor Tim King at the University of Cambridge Computer Laboratory in the UK, was purchased and rebuilt for the Amiga as Amiga dos. But it was not

optimised for a 16-bit computer,

resulting in disk access slowing down the machine.

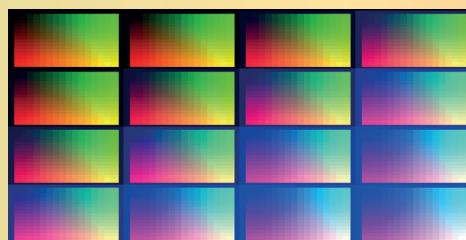
Artist Sheryl Knowles drew the famous image of the hand holding a floppy disk. She held the disk in her left hand for reference, as she was right-handed. Of course on some models of Amiga this made inserting the disk very difficult, as the drive was located on the right-hand side of the machine.



Thanks for the memory

The way that the Amiga handled memory was different to other machines. Agnus acted as the gatekeeper, but the processor could access other parts of memory faster. The first 512k of memory

Right: a display of the full Hold-And-Modify palette of 4096 colours on screen at the same time.



is known as Chip RAM – this has to be accessed at the speed of Agnus, allowing her to perform operations without processor interference. The rest of the memory is known as Fast RAM, as the processor can access this directly at its own speed. In later models with faster processors this improved memory access speeds. Fatter Agnus allowed up to 1MB of Chip RAM, and Super Agnus (in the Enhanced Chipset) could access 2MB of Chip RAM when available.

Colours of the rainbow

The Amiga can handle up to 4096 colours, but the amount on the screen depends on the mode chosen. Many games use the lower resolution modes, allowing 32 colours on screen at 320x200 or 320x400 pixels. (Overscan mode gives a larger screen area, going into the 'borders' on a television or monitor).

To store the colour data in memory, the Amiga uses bitplanes – sections of memory designated to the colour. These can be manipulated in real time to create special effects, or under interrupts using the copper. The more bitplanes, the more colours on-screen – at the expense of more memory used. The 32-colour modes, for example, use 5 bitplanes – that is: 5 bits per pixel.

There was also the special 'dual playfield' mode. This splits the display into two parts, a foreground and a background each with their own set of 3 bitplanes (giving 15 colours in the foreground and 16 in the background).

Colour 0 in the foreground is always transparent, allowing the background to be seen through it. This is ideal for games with parallax scrolling and moving backgrounds.

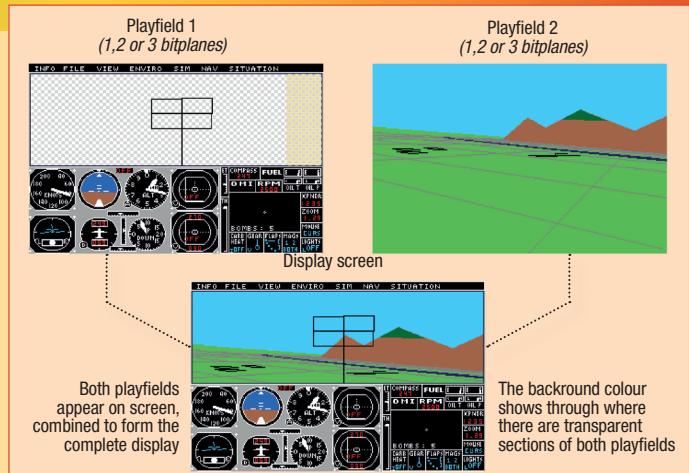
Extra-Half-Brite mode is unusual. Using EHB mode, the Amiga can be made to display 64 colours on-screen at once using a special hardware trick where the additional 32 colours are exactly half the brightness of the palette's original 32 colours. Much like HAM mode, EHB mode was only really useful for static displays and its main purpose was to add shadowing effects to an image. It was a feature missing from early Amiga 1000s.

Hold me

Hold-And-Modify (HAM) mode was an unusual addition to the original Amiga design. In theory this gives full access to all 4096 colours on a single screen. But the time needed to plot such a screen using multiple bitplanes makes it only really usable with static images and those with subtle transitions of colour. Instead of storing every colour for every pixel, HAM mode stores the change in colour.

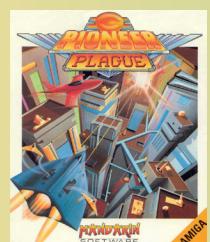
Jay Miner had doubts about the mode late in development. 'The Hold-And-Modify feature of the Amiga was left over from the time the NTSC television conversion was on the chips,' he said at the time. 'I almost took the HAM off the chips since it wasn't very useful with RGB colour.'

But the chip designers realised that removing it would leave a big hole in



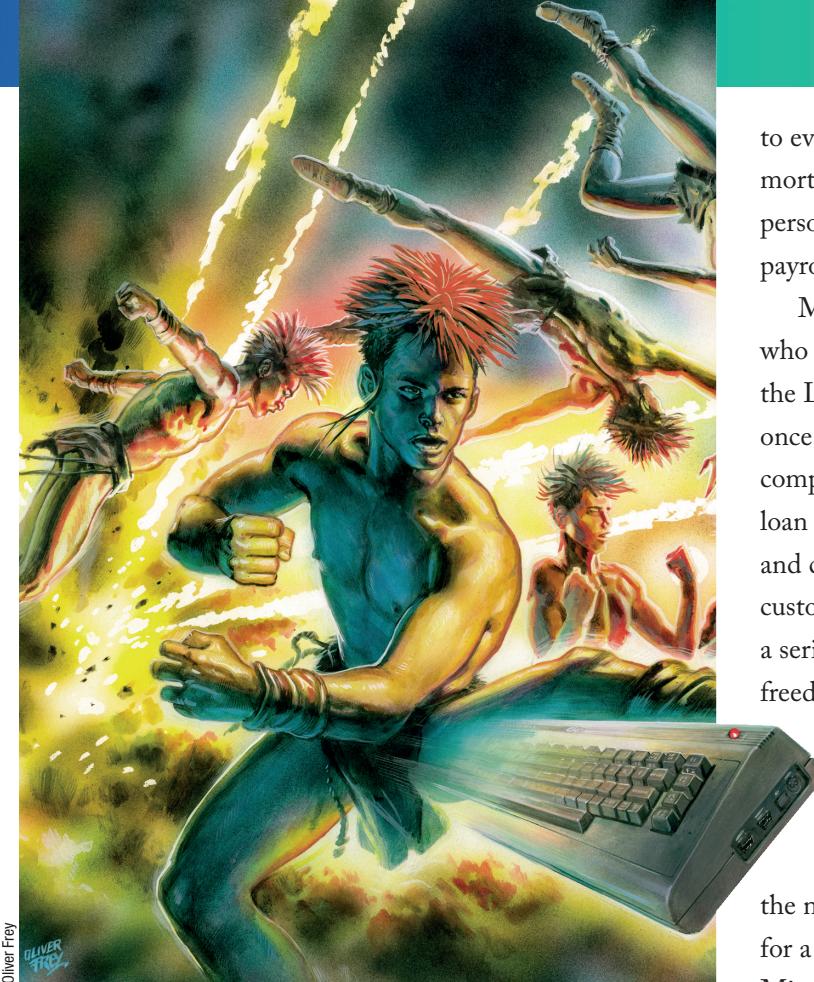
the chip and necessitate it being laid out again so it was left in. HAM mode would prove to be important for displaying photographs and digitised images. Very few games used HAM mode. Among the select few that did are *Pioneer Plague* and *Knights of the Crystallion*.

Deluxe Paint IV supported HAM, using the copper to split between its menus and the detailed images. *Digi-View* from NewTek used HAM to display digitised images. HAM8 mode would arrive with the AGA chipset. The AGA palette can choose from a range of 16.7 million colours but can only display 256 on the screen at once in regular display mode, but up to 262,000 colours in HAM8 mode.



Pioneer Plague and *Knights of the Crystallion*, below: two of the few games to employ the Amiga's HAM mode.



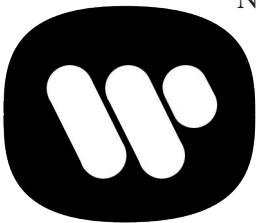


Oliver Frey

Give me a new 64

In the early 1980s technical development and financial politics went hand in hand or, rather, head to head. The previously mentioned North American video game crash of 1983 almost brought Lorraine to a standstill.

‘So there we were, designing this super graphic computer with four blitter channels, eight sprites and four sound channels, and the bottom just fell out of the video game market,’ Miner said. ‘This killed the joystick half of the company, and the cartridge market and that half of Amiga started losing money fast. It seemed like we owed money



Bosses at Warner Communications wanted out of loss-making Atari. In buying it, Commodore founder Jack Tramiel almost got his hands on the Amiga-to-be to replace the high-flying Commodore 64.

to every supplier in town. I had to mortgage practically everything I owned personally to help meet the company payroll.’

Morse and Miner approached Atari who had expressed an interest in using the Lorraine chips for their computers once development was finished. The company offered a deal – \$500,000 as a loan to keep Hi-Toro/Amiga running and continue development of the new custom chips. But the deal came with a serious restriction on Miner’s future freedom with Lorraine.

‘They got real tough...just about the time that [Jack] Tramiel was buying Atari.’

Tough meant exclusive use of the new chipset for a year, ostensibly for a planned 68000-based machine. Miner had little choice...but Atari was in trouble from the ‘bunch of junk cartridges’, largely ‘mangled adaptions of arcade games’ that resulted in a glut of unappealing games. Under Ray Kassar’s management Atari had gone from representing almost a third of all Warner Communication’s annual revenues to making a staggering loss, and was haemorrhaging \$1 million a day. Warner wanted rid of it.

At about this time, with the Commodore 64 flying high but aware of the dangers of standing still, Commodore International’s founder Jack Tramiel wanted to raise money through a shares issue to invest in the development of a 16/32-bit computer

before anyone else's new-generation machines wiped out the C64. Financier and chairman Irving Gould – tarred a bit with the Ray Kassar brush – disagreed. Tramiel also wanted to install his sons in senior positions at Commodore International, a move that Gould was resisting. The matter came to a head and Tramiel was forced out in January 1984 – taking several senior figures with him into his newly formed Tramel [sic] Technology, Ltd. He was on the lookout to acquire a development and manufacturing company. In the process he spoke with Amiga, but Tramiel was only interested in the chips not the staff, so that deal fell through.

He had entered into negotiations with Warner as he set his engineers to work on the next generation low-cost personal computer. Work was nearing completion when Tramiel concluded a deal in July 1984 with a Warner desperate to get rid of Atari's Consumer Division – all the bits that mattered to Tramiel – which he acquired for a very low price.

Now lawsuit and counter-lawsuit started to fly. First Commodore accused its former employees of taking intellectual property to Atari – an accusation supported by the incredibly rapid development of what would become the Atari ST series.

Tramiel, in the process of cancelling on-going Atari projects to review those worth keeping, discovered the Amiga-Atari deal for the Lorraine chipset he'd

originally wanted himself. Meanwhile Jay Miner, Dave Morse and Amiga were supposed to deliver the chipset to Atari by the end of June 1984 or be in default, but funds were low, development was behind and they risked losing the entire business with all its potential.

They needed funding, quickly. But what was the point of going back to Jack Tramiel, who was already negotiating to buy Atari? He had already said all he wanted from Amiga was the physical property, not the people. So instead



Commodore financier and chairman Irving Gould, **above**, fell out with Jack Tramiel over a new machine for Commodore and the installing of Tramiel's sons in the business – Garry, Sam and Jack with Leonard **below**.



they approached Commodore for a cash injection. In the event, Commodore bought Amiga Corporation outright and sent Atari the \$500,000 in repayment of the amount invested earlier into Amiga for the Lorraine development.

Immediately, Tramiel countersued Commodore through its new Amiga subsidiary for breaching the terms of their contract and gaining an injunction of further development at Amiga. It took months to settle, a period which gave Atari a head start on getting to market with the ST. The downside for



Amiga 500

Launched 1987

(Europe – April; US – October)

The classic design attracted many gamers,
helped along by bundles of great games.

AMIGA



POWER
DRIVE





Atari, lacking Lorraine, was the cheaper components used, a single-sided floppy drive and the Yamaha FM sound chip. It too was based around a 68000 processor but lacked an operating system of its own. Tramiel teamed up with Digital Research, Inc. to create an O/S combined with Digital's GEM graphical interface, which became known as TOS – The Operating System, also sometimes referred to as Tramiel Operating System – with its own green-coloured variation on the desktop.

One reporter described a prototype as a ‘typical Commodore-64-style, corner cutting, low cost Jack Tramiel product.’

If there was a ‘hit’ of the show for me, it had to be...the supermicro codenamed Lorraine by Amiga.”

Above: rare (and poor quality) images showing Amiga’s booth at the January CES Show, 1984 – the exterior and the ‘secret’ inner chamber housing Lorraine and a screen displaying the first version of the bouncing ball demo.

Lorraine sees the light of day

In all this chaos – and the continuing uncertainty in the American games market (by this time the games market for the ZX Spectrum and C64 in Britain was flying) – the Amiga team plugged away as best they could and a prototype breadboard was completed late in 1983, in time to reveal Lorraine to selected guests at the January 1984 Consumer Electronics Show (CES) in Las Vegas.

‘We made a motherboard for the breads to be plugged in, took this to CES and we showed some little demos to selected people away from the main floor,’ Miner later said. ‘They couldn’t believe that all this wiring was going to be three chips!’

To transport the fragile series of large breadboards with wires connecting them by plane the engineers wrapped the demo machine in pillows and booked an extra seat under the name of the mysterious developer known as Joe Pillow.

Writing in the April 1984 issue of *Creative Computing* magazine, technology journalist John J. Anderson (1956–1989) expressed his admiration. ‘If there was a “hit” of the show for me, it had to be my first glimpse of the supermicro codenamed Lorraine by Amiga.’ There was no hint of the machine in the Amiga booth, ‘but with an invitation to step behind the secret panel, my jaw finally got a chance to drop. Yes, Amiga. The people who brought you the Joyboard. Hard for me to believe too. To hear it from Dave Morse, president of Amiga, the joysticks and peripheral accessory products we have seen from the company up until now have served well to bankroll the Lorraine – the real project front and center on the drawing board.’

According to the technology journalist it seemed as if Lorraine was well on the way to flooring the market as well, but with a caveat: ‘Amiga is also like Atari in another respect – it must overcome its current reputation before it can be taken seriously. Okay, fellas. Let’s put the Joyboard behind us and get credible. The Lorraine just may be the machine that hundreds of thousands of graphics and sound enthusiasts have been waiting for since the introduction of the Atari.’

John Pandaris writing in *Amiga World* was brimming over with surprise: 'I stood up straighter, lost my cynical sneer, gaped rather stupidly and elbowed my neighbors in the ribs. The Amiga had cracked my armor—with sheer, naked power.'

Over a series of computer shows and events throughout 1984 and 1985 the new and still developing Amiga was demonstrated to the press and public. Those shows created a buzz around the Amiga as it slowly became a reality. *Byte* magazine devoted thirteen pages to a preview article on the computer, while *Creative Computing* described it as 'a dream machine', and *Compute* declared it 'the first true personal computer'. The

debut issue of *Amiga World* magazine stated on the cover 'The Future Is Here'.

Vital contributors to the buzz were the demos (*see side panel below and over the page*) – including the famous bouncing ball – to show off Lorraine's then astonishing 4096 colours and other capabilities that had Anderson dancing with excitement. 'The software boys, easily identifiable by their well-worn Adidas and gleeful smiles, had spent a little over a week devising demos for Lorraine, further hampered by a diskless I/O system. They still managed in a series of short programs to convey enough of Lorraine's powers to floor me. Amazing graphics and sound.'

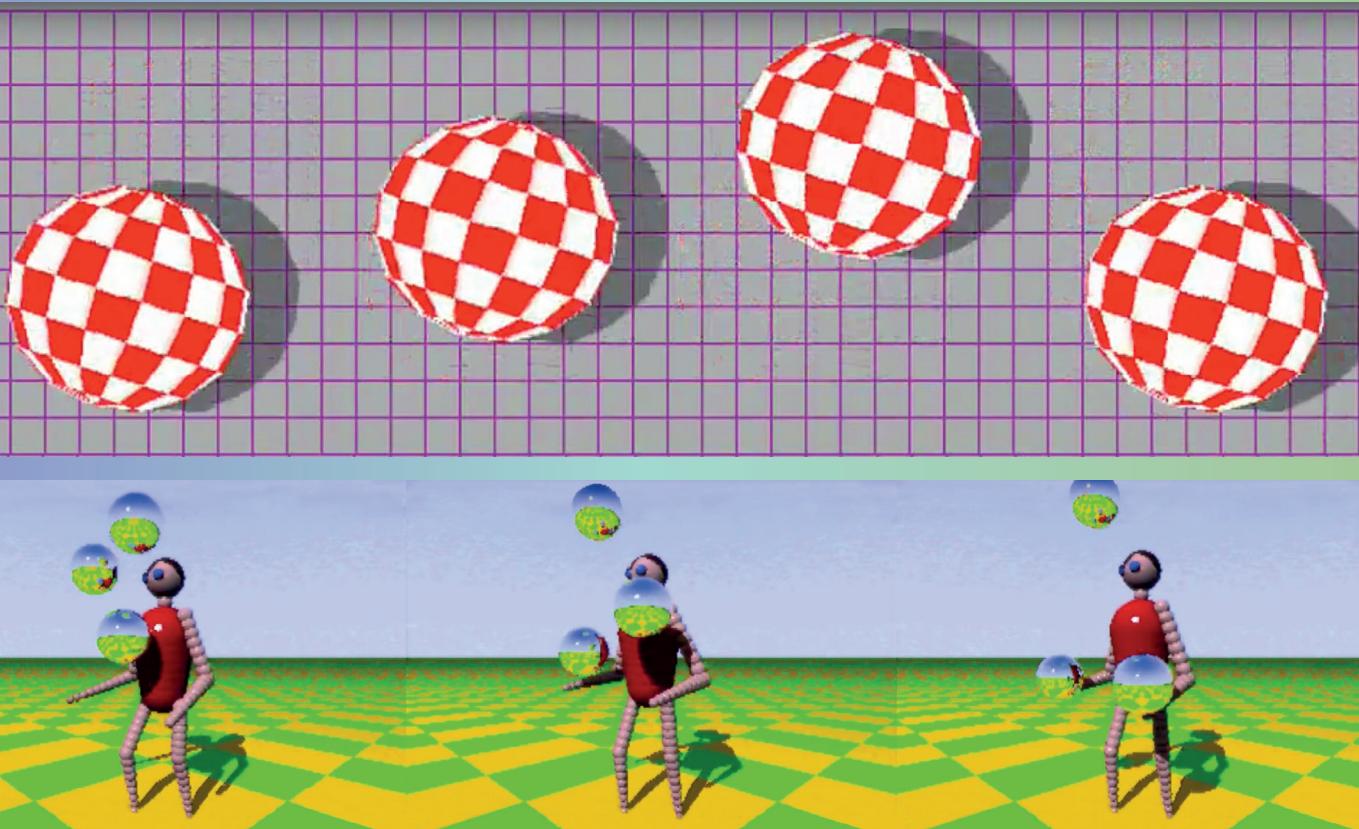
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Amiga Dream Demos

Showing the potential of the Amiga was an important series of demos. The earliest was known as *Robo City*, seen on the right, which showed off a vibrant colour palette and also the Amiga's built-in sprite and collision detection features that allowed large animated characters to move over complex backgrounds and interact with each other. Then came the *Boing Ball* demo. A bouncing ball with a rotating checkerboard pattern appeared on the screen.

To add impact, they added stereo sound – the sample perfectly timed to each bounce. The booming noise of the ball was Bob Pariseau hitting a foam baseball bat against a garage door, recorded by sound engineer Sam Dicker.





Top: the rotating walking cat, 2D in 3D.

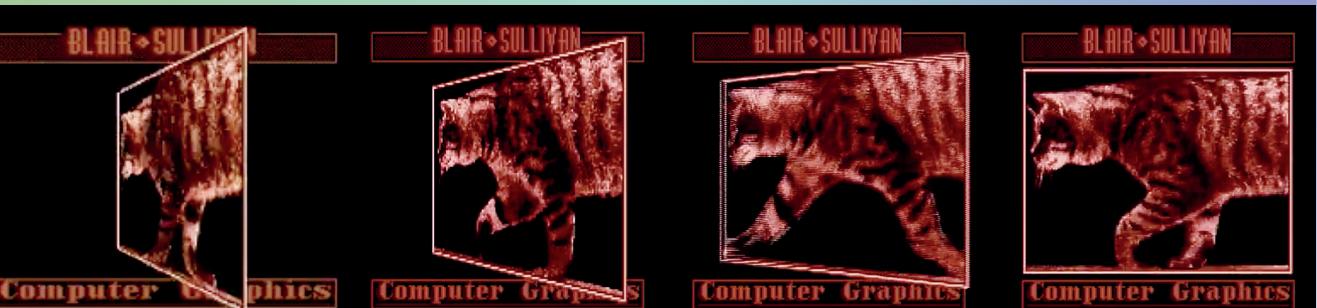
Centre: that famous bouncing ball and under it more balls in motion with raycasting and the famous Juggler.

He sampled it on an Apple II and then massaged the result into Amiga samples for Paula.

The bouncing ball became adopted as the unofficial Amiga logo. Later came *The Cat*, a photorealistic stalking tabby shown in a 3D rotating screen, and *The Juggler*, a short animation designed to show off the processing power of the Amiga.

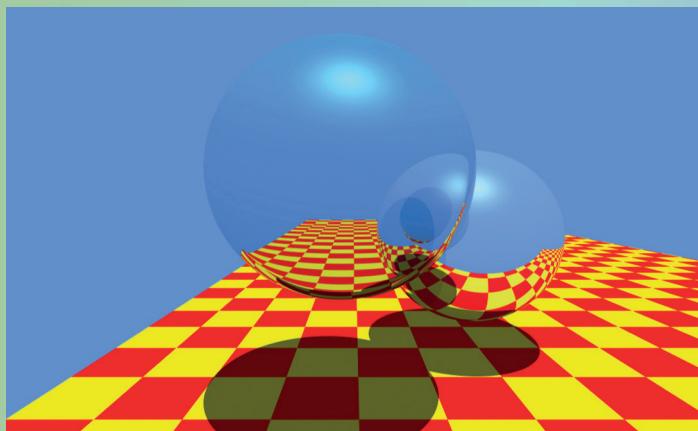
Eric Graham was the man behind the

Juggler animation. Graham rendered the frames in a raytracer program he wrote called *SSG*. The software used a script that described where the objects were, their surfaces, including how reflective they were, and the points where light shone from. The program then rendered the final image by ray tracing, calculating the light rays striking and reflecting from objects. The rendered images were



encoded in the Amiga's HAM display mode and then assembled into a single data file using a lossless delta compression scheme similar to the method that would later be adopted as the standard in the Amiga's ANIM file format.

Graham developed the software to become *Sculpt3D*, a fully-featured utility for drawing and rendering 3D scenes.

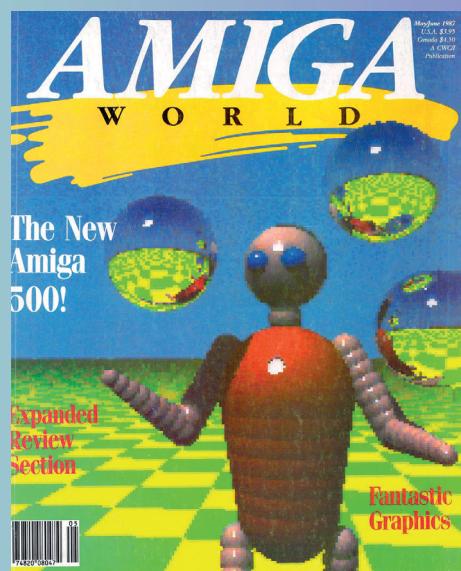


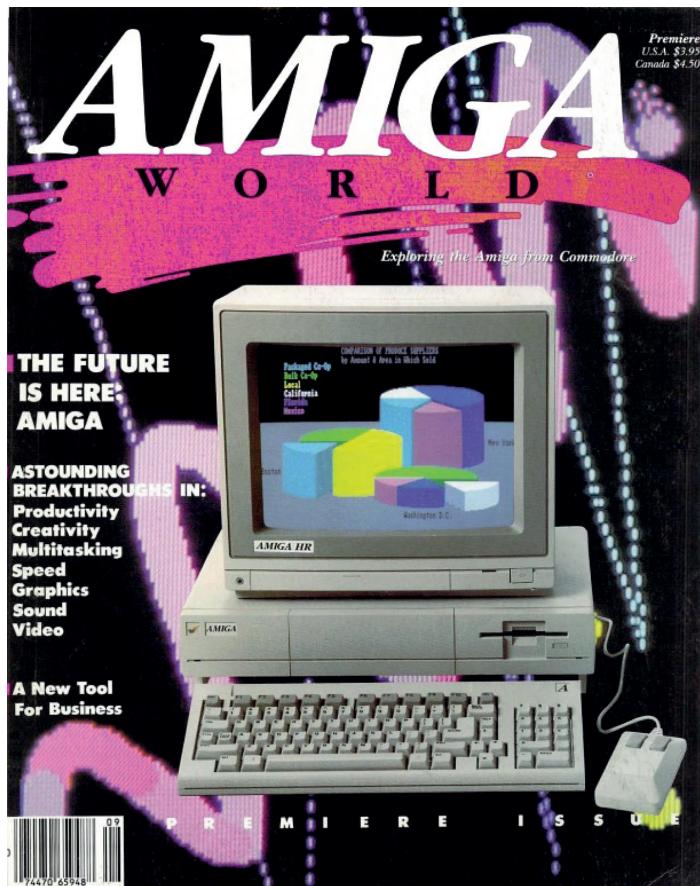
Turner Whitted's 1980 test of raytraced reflection, refraction, and shadow and Eric Graham's Juggler demo featured on the May–June 1987 cover of *Amiga World*.

Later versions included the ability to generate animations and became the forerunner of the tools used for sculpting 3D objects used today in games and film. 'Behold the robot juggling spheres,' he wrote in *Amiga World*. 'He stands firmly on the landscape...he is only a microchip phantom, yet he casts a shadow. You can see his reflection in the refined orbs he so deftly tosses...Though

he looks strangely real, he exists only in the memory of the Amiga.'

Eric Graham's was not the first example of computer-generated raytracing. Turner Whitted's paper of 1980 is widely regarded as the first modern description of raytracing methods in computer graphics. This paper's famous image of balls floating above a checkerboard floor took 74 minutes to render on a DEC VAX 11/780 mainframe, a \$400,000 computer. The Juggler would appear a mere six years later, created and displayed on a \$2000 Amiga.





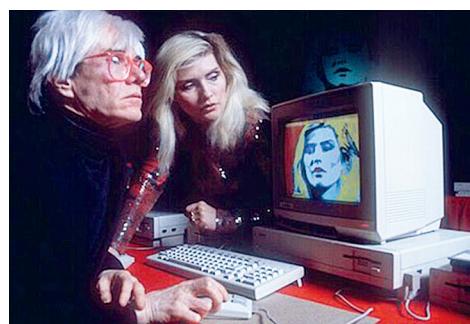
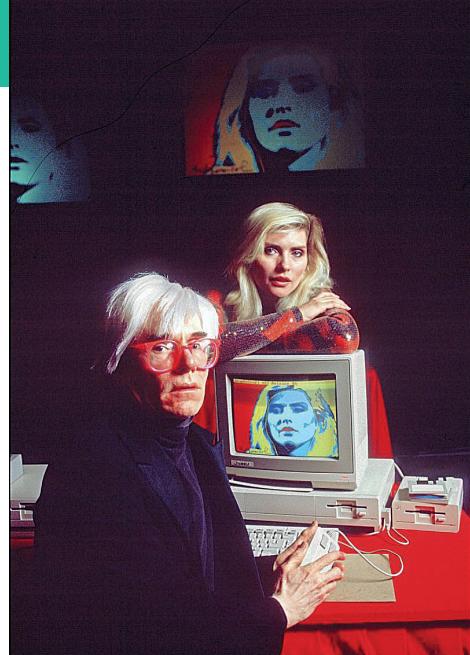
Launched in style

'Commodore was very good for Amiga in the beginning,' Jay Miner said of his new bosses. 'They paid off our creditors including my loans to the company and they got us a beautiful facility [ten miles away] in Los Gatos.'

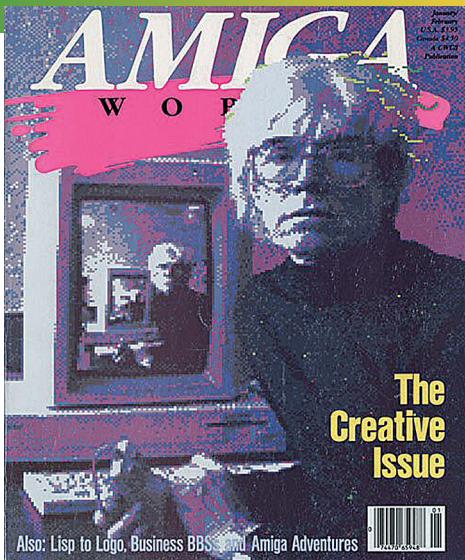
"...what a party that was, tuxedos, champagne...all just to launch a computer."

In an interesting side note, it was said that those mythical 'Florida dentists' got their investment back with interest when Commodore bought Amiga.

According to Miner, it wasn't



just money, there was also technical input. '[Commodore] made many improvements in the chips. They made a lot of improvements in the things that we wanted but we did not have the resources to accomplish. The Amiga originally only had 320 colours across the screen, even in the 640 mode. They helped us put in full colour in the 640



Also: Lisp to Logo, Business BBS, Amiga Adventures

mode. They also improved the colour by moving the NTSC converter off the chip.' Commodore also provided each member of the development team with their own Sun workstation, when before ten had to share a single Sage.

Lorraine finally debuted officially on 23 July 1985 as the 'Amiga from Commodore' (later dubbed Amiga 1000 when it went into production) with a massive fanfare, as Jay Miner remembered. '[Commodore] sent the entire company including wives and sweethearts out to New York for a grand launching party in New York City. And what a party that was, tuxedos, champagne...all just to launch a computer. They really did it top notch.'

For the press launch Commodore hired the Vivian Beaumont Theater at the prestigious Lincoln Center where in a well orchestrated sequence of events the Amiga 1000 kicked up its heels and showed its paces, the flexibility of the new graphical user interface, its 4096 colours all present on-screen, the

animation and *Robo City*'s collision detection, multi-tasking with several animated demos all running at once, four-channel synthesised sound, a dig at IBM with the very first demonstration of an IBM PC emulator running PC-DOS. But the real highlight came when famed (infamous?) artist Andy Warhol appeared with Blondie singer Debbie Harry. They were on hand to demonstrate the machine's graphic capabilities by Warhol drawing a portrait of Debby live on stage. 'What other computers have you worked with?' resident Amiga artist Jack Hager asked. With his trademark deadpan voice Warhol answered, 'I haven't worked on anything. I've been waiting for this one.'

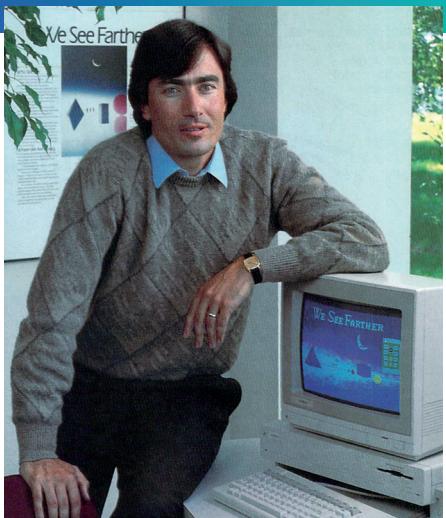
However, the engineers were worried that the machine might crash when Warhol used the 'flood fill' tool of *ProPaint*, which was known to have bugs and a tendency to crash the computer every second time it was used, but to their relief it kept working. However, production problems delayed the market launch and it would still be months before machines hit the shops, threatening to undo the excitement and press support that had built up.

Commodore needed software to be ready for launch, and so gave out development systems to key publishing companies. Among the first to get an Amiga was

The New York press launch for 'the Amiga from Commodore' was the most lavish affair of its kind and included artist Andy Warhol painting a digitised image of singer Debbie Harry. Warhol was as good as his word: remaining faithful to the computer, he appeared on the cover of #3 of *Amiga World* (January 1986) with an Amiga behind him.

The Amiga 1000 – finally released at the Summer CES in Chicago (October 1985) – seen here with the 1081 monitor, which oddly had only one speaker when the Amiga 1000 had stereo sound.





Chairman of Electronic Arts Trip Hawkins with his new Amiga 1000.

Trip Hawkins recruited 'a team of serious programmers' to develop Amiga product for EA. *From left to right, back row standing:* Mike Wallace, Dan Silva, Eddie Dombrower, John MacMillan, Steve Hayes, Jerry Morrison, David Maynard; *Back row seated:* Dave Boulton, Glenn Tenney, Jeff Johannigman, Anne Westfall, Jon Freeman, Steve Shaw; *Seated front:* Bob Campbell, Greg Riker.

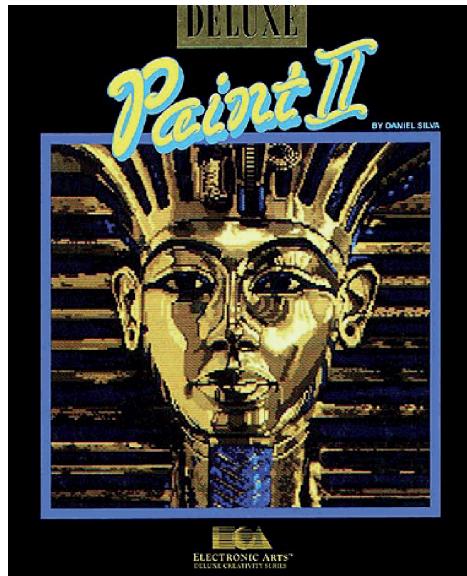
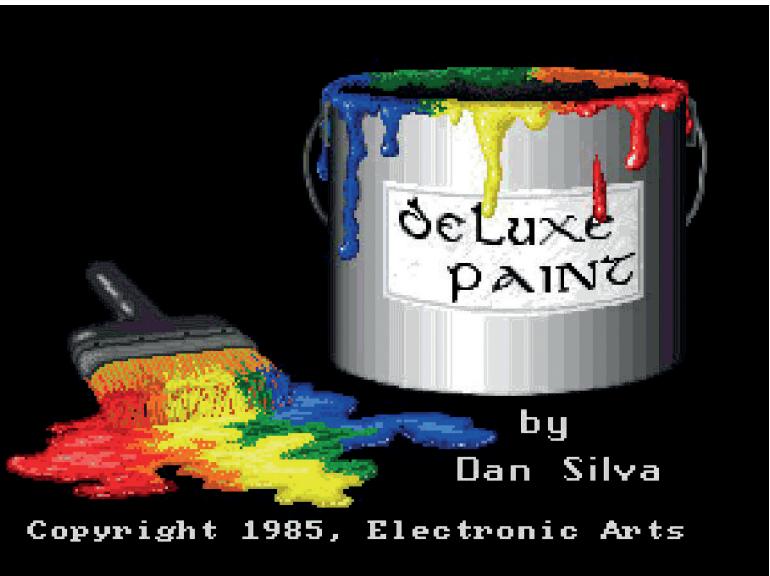
Electronic Arts, where the machine received a resounding endorsement from chairman Trip Hawkins. 'The Amiga will revolutionize the home computer industry,' he enthused. 'It's the first home

machine that has everything you want and need for all the major uses of a home computer, including entertainment,

education and productivity. The software we're developing for the Amiga will blow your socks off. We think the Amiga, with its incomparable power, sound and graphics will give Electronic Arts and the entire industry a very bright future.'

Housed in a wooden box, that first development kit was used to create games including *Arctifox*. EA's in-house graphic design software was then remade for the Amiga by programmer Dan Silva and sold as *Deluxe Paint*, the ground-breaking art tool that became so important for the games industry. The





iconic image of Tutankhamun's death mask was created by Avril Harrison in *DPaint* (as many called it) and appeared on the cover of *Deluxe Paint 2*. Along with *DPaint* came the Interchangeable

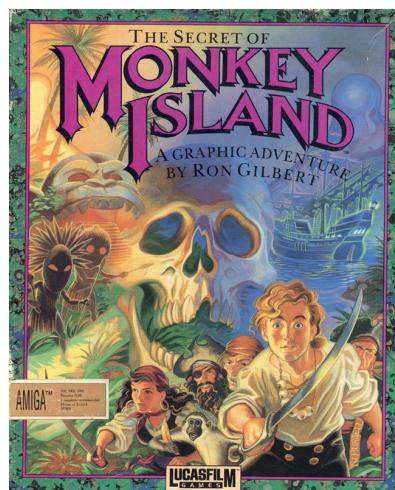
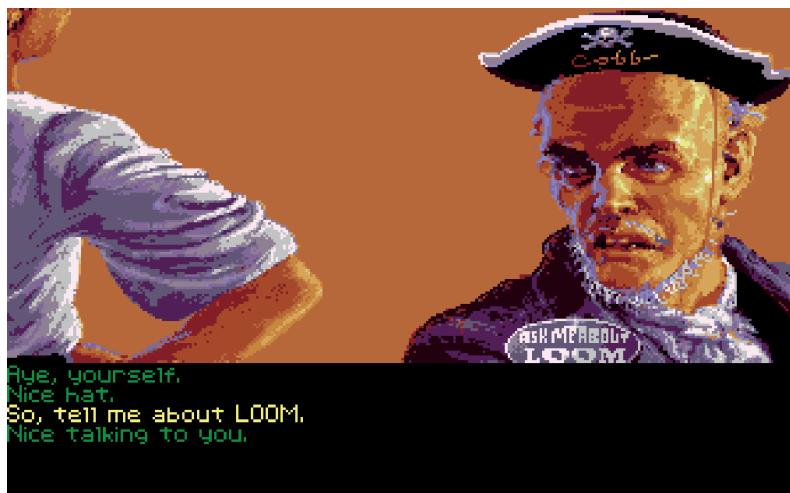
File Format (IFF) for transferring files between applications. And its Brush tool would inspire a famous Amiga character. A file known as 'guy.brush' gave its name to the star of *The Secret of Monkey Island*, Guybrush Threepwood.

Another person to get their hands on an early prototype was Bob Jacobs, an established Commodore 64 programmer. With his wife Phyllis he established Master Designer Software and planned to create 'interactive movies', harking

Above: the classic paint program and the box art by Avril Harrison that became associated with the Amiga as the bouncing ball demo.

Left: an *Arcticfox* action screen, a game from the Amiga development kit.

Below: Guybrush Threepwood talking to a pirate in *The Secret of Monkey Island*.







Amiga 2000

Launched 1987

Aimed at the business
and high-end user
looking for PC
compatibility.

back to the adventure films of his youth. It would be the name of the Cinemaware label that people remembered, and the hard work of former Amiga developer RJ Mical that gave them a game engine. *Defender of the*



A new level of quality in the graphics of *Defender of the Crown*.

Crown became a jewel in Amiga's crown, showing off the potential of the machine with its impressive graphics (much of which were created by artist Jim Sachs, see page 212) and sound (with music composed by Jim Cuomo).

Although the first Amiga 1000 reached the market in July 1985, the production hold-ups meant it did not become widely available until early 1986. Interestingly the Commodore name was not on the machine, but it did feature two Amiga keys (with the stylised capital A). Jay Miner had insisted on the possibility of expanding the machine, and wanted more memory. It shipped with just 256k and the Kickstart operating system needed to be loaded from a 3.5-inch floppy disk. The signatures of Miner and the developers were immortalised in the plastic case – along with the paw-print of Miner's dog Mitchy.



A failure of conviction

After Jack Tramiel's abrupt departure from Commodore in January 1984 Irving Gould appointed former steel executive Marshall F Smith to take over, but it was a short-lived reign. Under Smith's watch Commodore stock dropped from almost \$65 per share to less than \$5. Commodore needed a new CEO and in April 1986 former Pepsi CEO Thomas Rattigan took the helm, moving up from Commodore's coo to CEO.



On January 24th,
Apple Computer will introduce
Macintosh.
And you'll see why 1984
won't be like "1984"



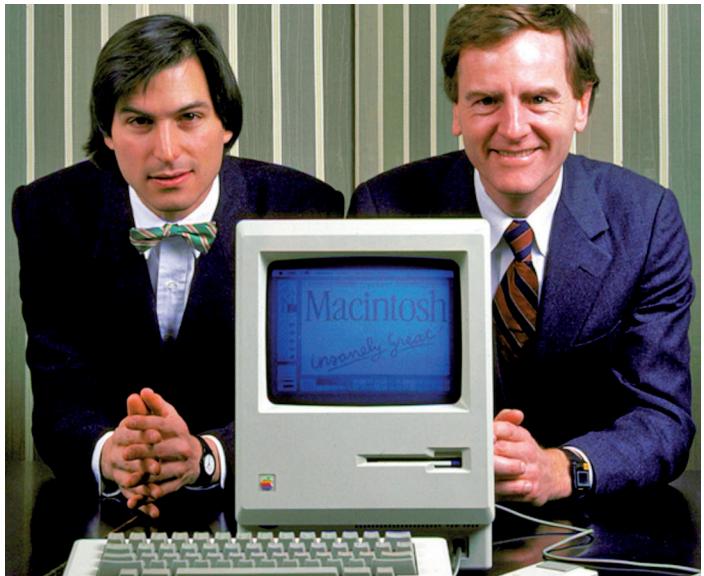
Apple had hired Rattigan's predecessor John Sculley, inventor of the Pepsi Challenge, from Pepsi-Cola so perhaps Irving Gould was hoping for a similar boost from a soft drinks executive.

Rattigan had his work cut out. A poor advertising campaign for the Amiga 1000 in the US (using stock photos) was badly received and initial sales were poor compared to the rival Macintosh launched in 1984 with its attention-grabbing Super Bowl TV advert. (At one point Rattigan put forward the idea of an Apple takeover

After Jack Tramiel left the company, Commodore suffered poor leadership in the executive suites from men unable to stand up to Irving Gould. Thomas Rattigan, **left**, was a possible exception in as much as his cost-cutting and staff slashing briefly saved the company and gave the Amiga a chance at life.

Left: Apple launched the new Mac with a drop kick of a George Orwell-inspired advert directed by Ridley Scott which premiered at the 1984 Super Bowl. With better marketing, even though it lacked colour, the Macintosh would beat Commodore's Amiga.

Below: Steve Jobs and former Pepsi CEO John Sculley showing off Apple's new Macintosh computer.

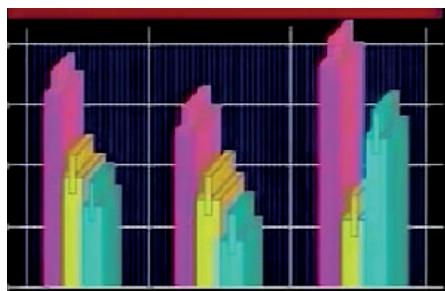
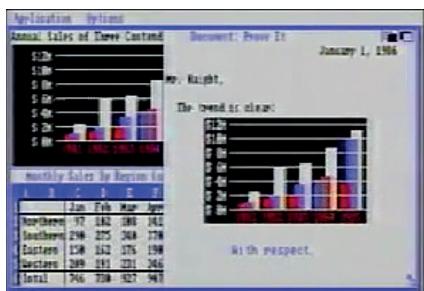


AMIGA

– seeing it as the best place to develop the Amiga hardware further, but Gould couldn't see it.)

Speaking to *Amiga User International* in 1988, Jay Miner was scathing about Commodore's advertising campaign... what there was of it compared to Apple's. 'I can't tell you how angry it makes me feel to see how the Amiga

"Old men changing into babies and kids competing in race cars. It was ghastly."



Commodore messed up the commercials for the Amiga 1000. They were off the target – at one end concentrating too hard on positioning the machine as a business computer, while missing its games potential with poor understanding of game-player demographics.

was handled. The advertisements they did have were absolutely awful. Old men changing into babies and kids competing in race cars. It was ghastly. And then a full year with no ads at all. They lost dealers and worst of all they lost public awareness.'

In a continuing downward spiral Rattigan carried on cost cutting and downsizing, in the process pretty much exterminating the team that had been Amiga Corporation.

'It's a sad story,' Jay Miner said. 'The sales of the Amiga didn't zoom up as fast as they had hoped. Though it sold as many as the Macintosh did in its first period, there weren't enough sales to cover its expenses. The bank insisted

that Commodore cut its expenses. So it cut heavily into the engineering facility in West Chester and also at the Amiga facility in Los Gatos. A 70% or so cut in engineering in Westchester still left fifty or so people in engineering but similar cuts at Amiga left only ten. People started giving notice and quitting but Commodore stuck to its policy of no raises and no replacements.'

In spite of these cuts Miner and his reduced team managed to finish the 1.2

software release, and design a revised set of custom chips for the next generation of Amiga computers. 'Amiga did these things, not Commodore,' Miner said.

Germany makes the running

It is worth remembering Commodore's unusual structure to appreciate what happened over the next few years. Jack Tramiel had started the original company in Canada in 1953, initially manufacturing typewriters and then moving into office furniture. A share scandal involving the bank that had financed Commodore (with no apparent involvement of Tramiel or Commodore) left Tramiel needing a new investor. In stepped Irving Gould, who then

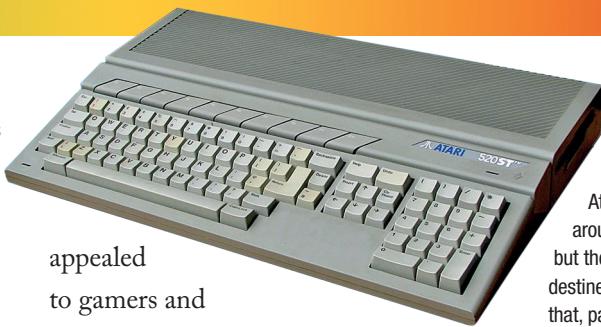
proceeded to keep a tight rein on the purse strings. Tramiel was not given funds to expand the company and there was no rights issue to bolster the finances.

A new entity, Commodore International, was incorporated in the Bahamas to take advantage of its lower tax rates. Subsidiary companies were set up in the UK and Germany, with the aim of manufacturing and promoting the Commodore machines in highly profitable territories. These subsidiaries had a fair degree of autonomy in terms of advertising and development.



It was in Germany that perhaps the most unusual add-on for the original Amiga was developed. This was called the Sidecar, because of the way it was designed to sit beside the main computer. Inside was an Intel 8088 processor and the heart of an XT PC-compatible. Data could be exchanged between the PC and Amiga, and the PC side included a hard drive – the first example of that technology Commodore marketed for the Amiga. While it gave access to MS-DOS software, the incompatibility with the later Amiga 500 and high price would make it a niche product.

As the Atari ST hit the shelves, it became clear its lower price point



appealed to gamers and those upgrading from 8-bit. It would take time to turn around the Amiga's fortunes, and it came in the shape of the Amiga 500. This was one of the moves Rattigan put forward. The machine was released some six months earlier in Europe than America, which under Rattigan is where Commodore action seemed to have moved, as Jay Miner recalled.

'Commodore laid off more people in Los Gatos and closed it. Let's face reality, Los Gatos was a very expensive place...our rent per square foot was twice what Commodore paid in West Chester, [PA]. Commodore didn't like paying gobs of money to support Amiga when their German and West Chester design teams could design better boxes faster and cheaper. Those teams promised to have the 500 and the 2000 ready by September 1986...but they were still more than a year late.'

It must have hurt that the 'foreign' teams were using the original Amiga team's chips and software, and refusing to continue support of the 1000. '[They] refused to cost-reduce the 1000 line. Because, in my opinion, they didn't want a low-cost 1000 to compete with West Chester's keyboard-attached 500.'

Irving Gould cancelled the original

Sales of the Atari ST rang rings around the A1000, but the Amiga 500 was destined to change all that, particularly for Commodore in Europe.

Photo by Bill Bertram

The Commodore A1060 Sidecar connected to the expansion bus on the right side of the Amiga 1000. The Sidecar was designed to take advantage of the IBM PC productivity software Commodore lacked for the Amiga.



Amiga 2000 being completed in Los Gatos in June of 1986 on the grounds that it only had two IBM card slots instead of three and the Amiga slots were not shaped enough like IBM cards. Miner felt there was another reason for the cancellation. 'Commodore were convinced that their 500 and



David Pleasance, **above**, had the brainwave of bundling the Amiga 500 with a major game launch and gambled along with Ocean, who spent £1 million on the *Batman* licence. The gamble paid off spectacularly.

German-made 2000 would be ready by September 1986, so why advertise the 1000 when there wouldn't be any around soon?

The Amiga people were not the only ones unhappy with Rattigan. As his profile grew, so Irving Gould became less happy about his running

the company. An independent firm of business auditors from Dallas was brought in at Gould's request. The final report seemed intent on undermining the successful work Rattigan had achieved – a steady growth in sales and the whole company running at a profit after five quarters of losses. Rattigan would ultimately be fired after working just one year of his five-year contract, leading to a long-running and acrimonious lawsuit.

Visually, Rattigan's baby – the 'keyboard-attached' Amiga 500 – and the Atari ST are a similar shape. The keyboard has a wedge shape leading to the back, where the ports are located, and a 3.5-inch floppy drive on the side. While the ST's built-in MIDI ports gave it a boost with musicians, it was the video output that formed a lucrative market for the Amiga. The famous

Video Toaster from NewTek was what is known as a genlock, synchronising the computer output with existing video. From captions for a television show to the advanced CGI seen on *Babylon 5* and *seaQuest DSV*, the Amiga became a favourite of television stations and graphic editors.

Another key change in Commodore's fortunes came with the bundle concept. Retailers had already been offering package deals, with a computer and several games, to new buyers. Managing Director David Pleasance and Commodore UK took that idea further.

Approaching software house Ocean, Commodore gambled on the big-budget Tim Burton 'Dark Knight' adaptation of *Batman* and its licensed video-game being created in Manchester. 'All I will say is that those guys had incredible foresight and huge balls to go along with my idea,' Pleasance later said. Ocean offered the game for free but Pleasance stuck to his plan of paying a royalty for each unit sold – and the *Batman* pack sold in large numbers, swelling the coffers of both companies.

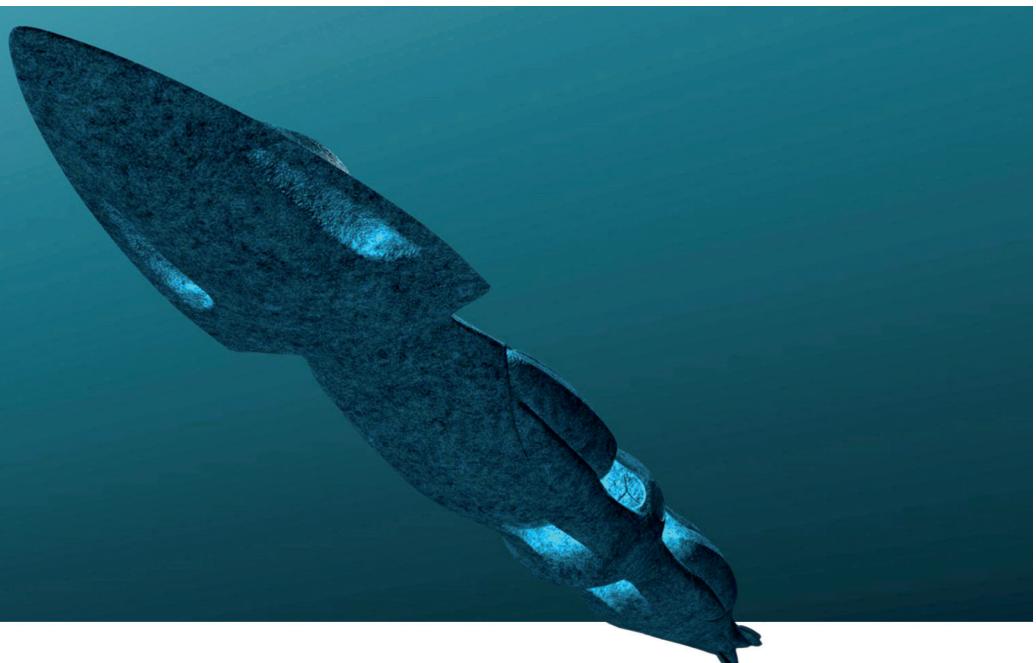
The US market stalls

With Irving Gould installing himself as CEO and living most of his year outside the US for tax purposes, he needed someone to run the business on a day-to-day basis. He turned to Mehdi Ali, one of the consultants from the firm of auditors that helped oust Rattigan. Ali was not popular with the

workforce, cancelling projects and firing engineers. Many saw him as squandering the chance that Rattigan had given Commodore with the Amiga, others upset that Ali was attempting to turn Commodore into a new corporate giant aping IBM rather than the innovative company it had once been.

America was of course a big market for the Amiga, but it rapidly gained a loyal following throughout Europe. Many Commodore 64 fans upgraded. The thriving demoscene found new and greater ways to push the Amiga hardware, showing off their work at regular demo parties (*see pages 70–89*). And piracy played a big part too. Some companies revealed as many as ten pirate copies existed for each game sold. Swapping and mail trading gave access to the latest games, with groups competing to crack and spread new releases faster than their rivals. XCopy

One of the TV series that relied on the capabilities of NewTek's *Video Toaster* running on the Amiga 2000 was *seaQuest DSV*. Designed by Tim Jenison in Topeka, Kansas, *Video Toaster* was first shown in 1987 and released in December 1990.







Amiga 3000

Launched 1990

Designed as a high-end workstation, with Enhanced Chipset (ECS), faster processor and room for expansion. Workbench 2.0 was launched in tandem with it.



The Team 17 logo of the early Amiga days, above, and its current appearance as seen on the company's website.



and other programs were needed to copy disks, but users had to be aware of the dreaded 'virus'.

The Swiss Cracking Association produced the first virus to gain notoriety. The SCA virus, which appeared in November 1987, lurked in the boot sector of a disk and every fifteenth time the disk was booted a message appeared.

Something wonderful has happened.
Your AMIGA is alive !!! and, even better... Some of your disks are infected by a VIRUS !!! Another masterpiece of
The Mega-Mighty SCA !!

It was not made to be destructive, but by copying itself automatically to the boot sector of any disk that wasn't write-protected, the SCA virus could stop a game from working. It would also prove harmful to newer versions of the

THE VIRUS-PROTECTOR V1.0
(C) 1987 BY THE MEGA-MIGHTY
SWISS CRACKING ASSOCIATION

E Examine a disk
K Kill virus on a disk
P Protect a disk
I Instructions
Q Quit

Press E, K, P, I or Q !

operating system. Later viruses included Byte Bandit and Glasnost, and led to the whole industry of creating and stopping viruses that plague modern hardware.

Another key area was public domain software. The Fred Fish disks were compiled and spread around the world, collating new and free software (games, utilities and graphics). The public domain libraries also appeared, copying PD software disks for a small fee. One of the best-known PD libraries in the UK was 17-Bit Software. Its founders would go on to build one of the most respected Amiga software houses in the shape of Team 17.

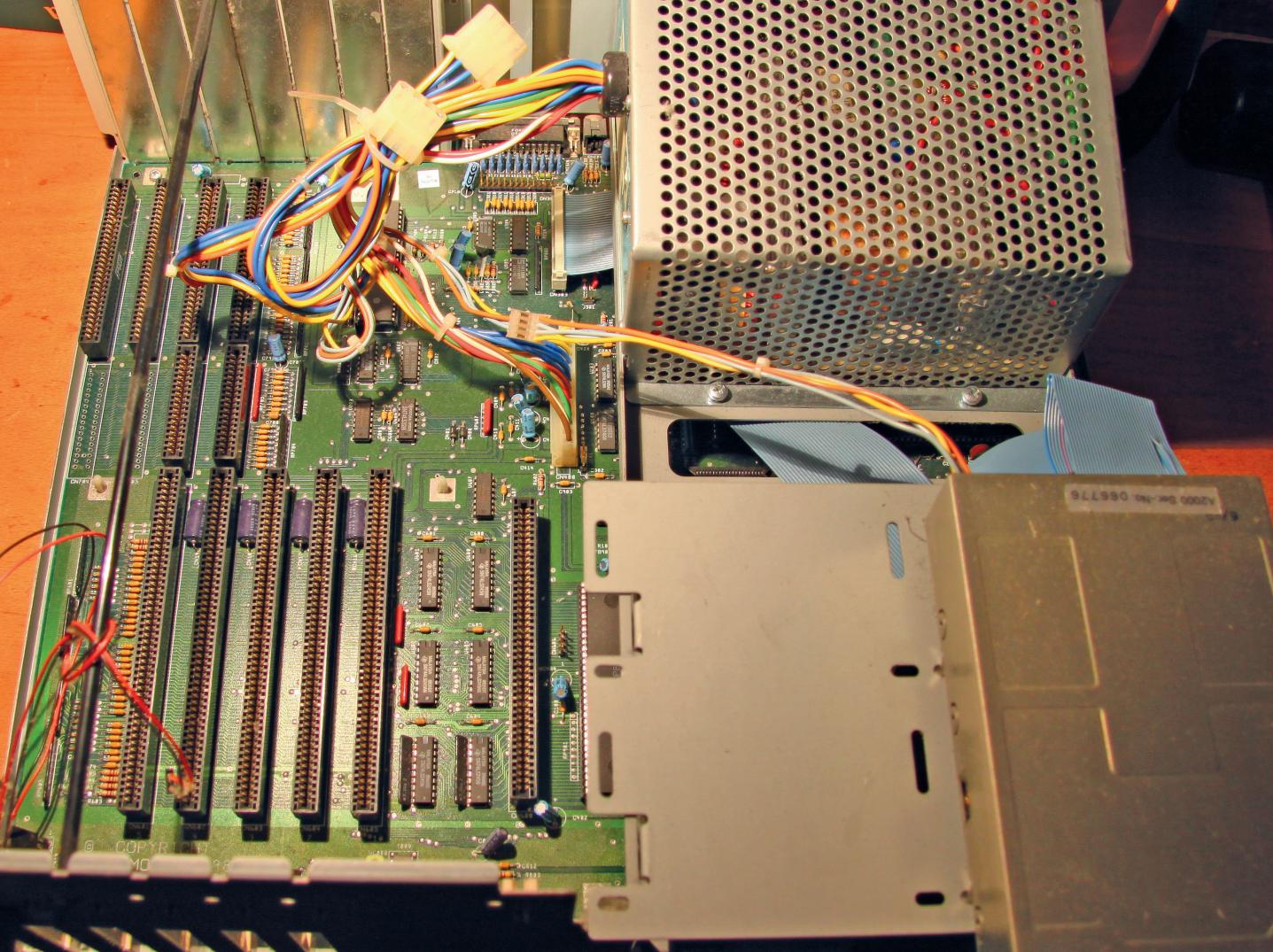
A growing international family

Over time, new models of Amiga appeared – but none was a big leap forward. The Amiga 2000 was targeted at high-end and business users, again a design from Commodore Germany. It reverted to the keyboard and base unit design of the original Amiga 1000. The 2000 was designed to be expandable, with five Zorro II slots and four PC ISA slots internally. This gave access to SCSI devices including early CD-ROMs, plus the chance to use PC 5.25-inch drives for compatibility.

Commodore UK

was responsible for the strange hybrid Amiga 1500, with twin floppy drives and Kickstart 1.3 – although





later models boasted the Enhanced Chipset.

The Amiga 3000 model launched at the same time as Workbench 2.0, giving support for larger hard drives and a new

look. Built in to the os was scripting language *ARexx*, designed to swap data between applications and automate tasks. Reviewers commented that there was little improvement in performance and processing speed – in spite of a greater disparity in price – between

the Amiga 1000, 2000 and 500

models, since they shared the same basic architecture, but the 3000 was built around the new Motorola 68030 CPU and 68882 math co-processor. With other enhancements in

The inner workings of an Amiga 2000 (hardware revision 6.2). The power supply at top right and the hard disk drive and assembly below it hide the RAM, Agnus, Denise and Paula chips. The four PC ISA slots are at top left and the five Zorro II slots to the lower left. The Zorro name comes from the code name of an A1000 prototype board and the 'Zorro' board was the one that followed the 'Lorraine'.

Left: The Amiga 3000 boasted two front-accessible 3.5-inch drive bays.





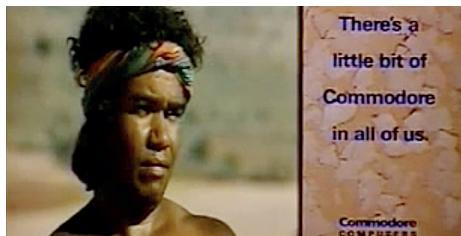
the system memory, the 3000 offered a greatly enhanced performance.

1990 was a strange year for Commodore. Its efforts at the trade shows and in development were split between the high-tech C64GS, the cartridge-based Games System built around existing Commodore 64 hardware, and CD-TV.

Right: Cheap but not so cheerful, the short-lived Amiga 500 Plus.

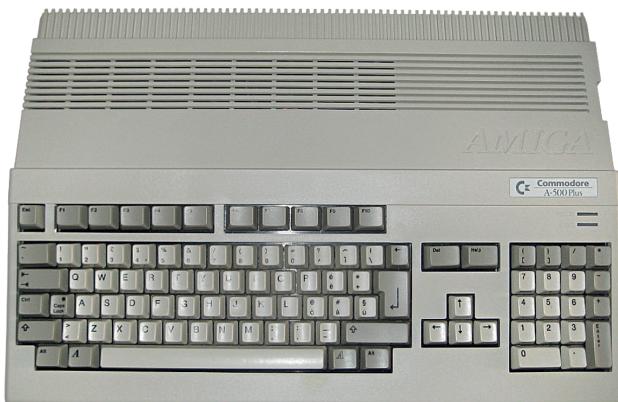
The CD-TV unit, released at the end of the year, was promised to have a large range of software at launch, thanks to third-party developers. But industry reaction was lukewarm and powerful publishers like Lucasfilm were sceptical of the CD medium being 'too fragile' and the system unable to deliver the hinted at Full Motion Video. 'Potential buyers and, more importantly, software

Magazine adverts and TV commercials of almost no recognisable relevance – the Christmas 1990 campaign.



developers, should be aware of [CD-ROM's] limitations,' *Raze* magazine wrote in its December 1990 issue.

The reality was a small number of games spread over the next three years and selling off the hardware cheap. The advertising campaign that Christmas typifies Commodore's problems. An Aborigine throwing a boomerang appeared in the TV and print ads, along with the slogan 'This Christmas there's a little bit of Commodore in all of us.'



Another dead end

With changes to its motherboard, the Amiga 500 Plus was cheaper for Commodore to manufacture than the 1000, 2000 and 500 models, but did feature the Enhanced Chipset, extra memory and came with the new Amiga OS 2.04. While the A500 Plus went on sale in many European countries it never had an official release in the US.

The new version of Kickstart caused some compatibility problems with some popular games, which refused to work on the A500 Plus. This and Commodore's plans for a new-

generation Amiga resulted in the A500 Plus having a short life: released in 1991 it was discontinued within a year.

During 1990 Commodore headed down another road which turned out to be a second cul-de-sac.

Heading the project was Atari founder Nolan Bushnell. 'Back in the 1980s,' he told *New*

Generation magazine (April 1995), 'I sold some technology to Commodore and spearheaded its movement for CDTV.'

The result was Commodore Dynamic Total Vision, or CD-TV. Designed as a set-top box that would be as ubiquitous as the video recorder, the machine could read advanced CD formats, displaying pictures and videos and playing back stereo-quality music.

As an interactive multimedia entertainment appliance, it shipped only with a remote control, however for \$200 an expansion kit supplied keyboard, mouse and an external floppy disk drive, which turned it into a fully-fledged Amiga computer (running under a modified Amigados 1.3) able to run most A500 software. In addition to the expansion kit Commodore put out an add-on CD-ROM for existing Amigas.

Bushnell later blamed Commodore's high \$999 selling price for its failure. It was supposed to launch in March 1991 with one hundred titles heralding a new dawn in interactive gaming and entertainment. Just fifty titles made the launch, a mix of educational and basic games. Even at a lowered price point,

CDTV

A smart looking entertainment centre – Commodore's CD-TV, an Amiga set top box.

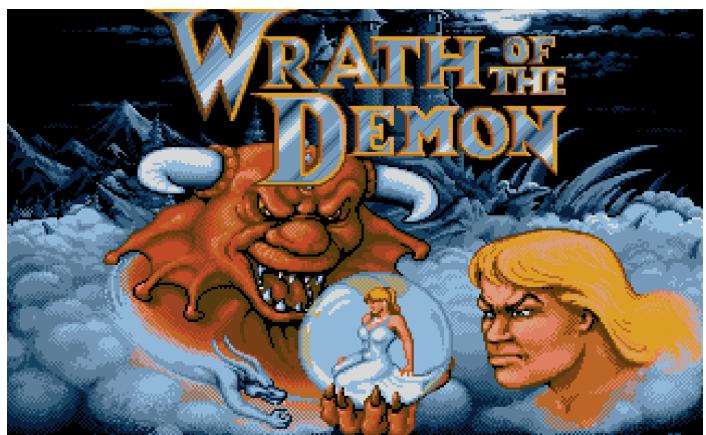


Bushnell said, 'I can tell you the number of units we sold in the US at \$800 you could put in your eye and draw tears.'

Later in the same year Philips launched the CD-i and outclassed Commodore's effort, which was hampered by running on the outdated Kickstart 1.3.

Below: released in 1991, the Philips CD-i 220 outclassed Commodore's CD-TV.

Bottom: *Wrath of the Demon* by Canadian team Abstrax was one of the few game releases for CD-TV.



CD-TV (Commodore Dynamic Total Vision)

Launched 1991

CD was the future of gaming, but a lack of vision and dated hardware meant this was a big mistake from Commodore.

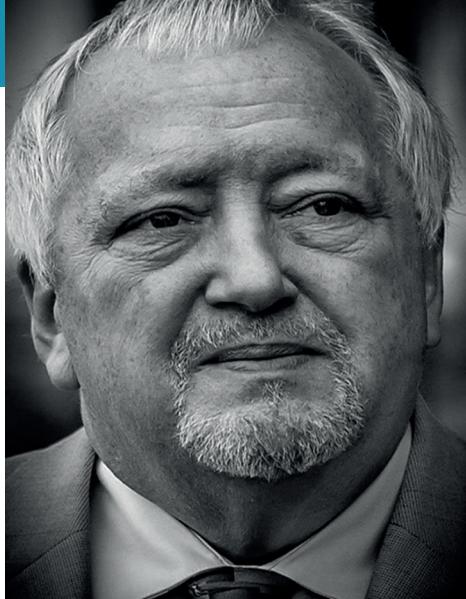




Right: The A600 was ‘a complete and utter screw-up,’ UK Commodore boss David Pleasance said of the hybrid he did not want that America forced on him.



Ali Mehdi (top) and Irving Gould, not listening to Europe, which is where Commodore was really scoring.



Keeping the games alive

The Amiga 600 launched in 1992 and also contained the Enhanced Chipset. It was an example of a good idea badly implemented through confusion between the American executive and European management, with marketing overruling the planners and engineers.

As David Pleasance recognised, with the almost demise of the C64 (and its vast games base), Commodore needed

“Imagine our surprise when in the UK we took delivery of a quantity of computers with the model number A600.”

something to take its place. He met Mehdi Ali and explained they needed a very low-cost entry-point Amiga to replace the 64 ‘with ideally a similar price point (£199 retail or a maximum of £249)’. A cheaper model for younger users or those just playing games would have made sense as the consoles were taking a larger market share. Indeed, the magazines at the time were talking

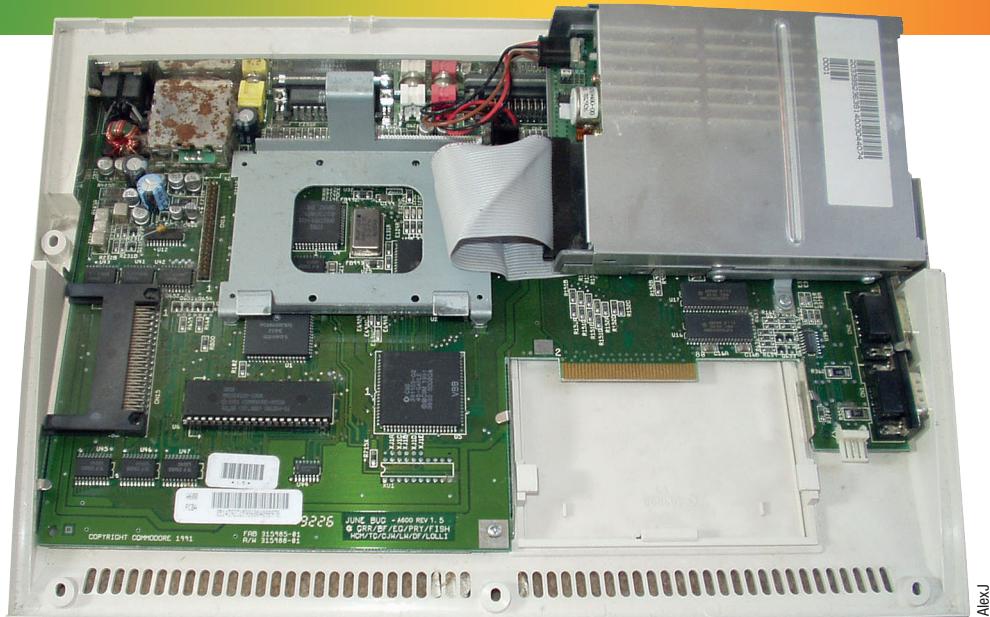
of a reduced cost model and what an opportunity it presented.

The product Pleasance and his European colleagues wanted was a very basic Amiga with the potential for upgrading as consumers’ pockets allowed, with the addition of hard drives, RAM, and so on. The plan was to convert C64 users to the Amiga range. The new machine’s designation should be the



Amiga 300 to convey the idea of its position in the Amiga family. ‘Imagine our surprise,’ Pleasance has said, ‘when in the UK in March of 1992 we took delivery of a quantity of computers with the model number A600.’

Mehdi Ali, it seemed, refused to sell an Amiga with a hard drive – a prerequisite for the European teams to sell the A300. However, the A600’s design was poorly executed and even though it had less features than the A500 it cost more to manufacture. Being called the A600 gave consumers the impression that it was a higher specification machine than the A500, which had a disastrous effect on sales of the A500. ‘[It] is one perfect example of Commodore senior [American] management never having a “plan” of any kind,’ was Pleasance’s



A600 with part of the case removed showing the motherboard and the floppy disk drive. There was an optional hard drive available and later iterations included a hard drive, designated as the A600HD.

AlexJ

opinion, one borne out by results and the cool press response.

The Amiga 600 was the first Amiga model to be manufactured in the UK, at Irvine in Scotland, with later machines manufactured in Hong Kong and the Philippines. It was a flawed stopgap before the introduction of the 32-bit Amiga 1200 and an unnecessary upgrade, with existing games requiring Relockick (a boot program effectively downgrading to the earlier Kickstart) to remain compatible. The lack of a numerical keypad also made some games unplayable. It was sold in two forms, with or without the internal hard drive.

Right machine, wrong price

The Advanced Graphic Architecture chipset was a jump forward for the Amiga, though it was too little and too late to save Commodore's fortunes. AGA boosted the colour palette from 4096 to 16.8 million, allowing 256 colours

on screen in normal mode and 262,144 (18-bit) in HAM mode. With this huge boost and with its faster 68EC020 microprocessor, the Amiga 1200 and 4000 boasted graphics that outshone the 16-bit consoles.

The A1200, released in October 1992, followed the general form of its predecessors the Amiga 500 and 600 in being an all-in-one design: alphanumeric keyboard, CPU and disk drives incorporated in a single housing. Hopes were pinned on the Amiga 1200 as a low-cost machine – £399 (UK), \$599 (US) – but they were not to be realised. The custom chips were more expensive to produce than chips used in other PCs, making the 1200 more expensive than Pleasance's ideal £200–£250 price point. To reviewers the AGA chipset was a bit of a disappointment, some comparing AGA unfavourably alongside continually improving Video Graphics Array (VGA) on IBM PCs and clones. And there were



Amiga 500+

Launched 1991

A cost-reduced version of the A500,
it contained the newer Enhanced Chipset
(ECS) and the improved Kickstart 2.04.

ARTIGA



Commodore
A-500 Plus

POWER

DRIVE





Designed to compete with IBM and Apple, the Amiga 4000 had a number of expansion connectors, for joystick, mouse, light pen and standard serial and parallel ports.

commentators who thought the 68020 CPU outdated and Commodore should have fitted the 1200 with a 68030.

The Amiga 4000, seen as successor to the A2000 and A3000 computers, was fitted with the Motorola 68040 CPU: the Amiga 4000/040 appeared in tandem with the A1200 in October 1992 and a

second model, designated 4000/030 and fitted with the 68030 CPU was released in April 1993.

A bid to keep ahead of the game

As the PC began to dominate and Windows 95 became a viable platform for game publishers, the Amiga needed a performance boost. This was the dawn of the co-processor, add-on chips designed to calculate faster. Companies that remained loyal to Commodore began developing for the new CD-based console, the CD32. Commodore called it 'the first 32-bit games console', although in reality the FM Towns Marty was first to market (in Japan at least). The 32-bit CD-ROM machine turned the Amiga line into a dedicated gaming console. Based on the AGA chipset, the CD32 was of similar specification to the A1200, with a 68EC020 CPU at its heart.

By this stage, the Amiga had lost traction in the United States, where the IBM, its PC clones and Apple had eclipsed the Amiga line. It was in Europe where Amiga still scored and so had become the main focus of Commodore marketing announcements. So the CD32 was first revealed at London's Science Museum on 16 July 1993, whereas in the US it was only demonstrated at the World of Commodore Amiga show in September (the same month the console hit the shops in Europe and Canada).

Slated for a US launch in early March 1994, the CD32 was never





SIMPLE STUFF: WATCH OUT FOR AMBUSHES THOUGH...



The CD32 lent itself to first-person 3D games, such as *Breathless* (above) from developers Fields of Vision, Black Magic's *Gloom* (first stage loading screen above left, in-game action left and title screen below), and Team 17's *Alien Breed 3D* (packaging art far left and matching loading screen graphic on the facing page).



officially sold in America. The reason was an injunction against Commodore for missing the deadline to pay \$10 million for the use of another company's XOR patent relating to the computer graphics display system. The injunction penned up Commodore's inventory of CD32 consoles intended for US sales at the Philippines manufacturing facility until the debt was paid. It wasn't: shortly after, Commodore filed for bankruptcy.

Existing games had CD-quality intros and extras added to the disk while others sought to use the format better, particularly in first-person 3D

games such as *Gloom* and *Alien Breed 3D*. However, a later bundle included *Dangerous Streets*, which had been rubbished by most magazines in the Amiga 1200 version (20/100 and zero, for instance) and left reviewers puzzled





CD32

Launched July 1993

The CD-based console, arriving too late to save the company and only sold in Europe and Canada.

Commodore

MIGA CD32





The officially bundled *Dangerous Streets* was rubbished by most Amiga magazines.

Through its expansion bay the CD32 could be turned into a fully working A1200 computer with a keyboard, meaning it was much more flexible than its rival consoles.



specifications than its Japanese rivals, Commodore had run out of financial steam at the point when a wave of powerful new consoles was coming over the horizon.

An ignominious end

Commodore International was struggling, innovation at West Chester was stifled and the engineering staff knew where to lay the blame: at Mehdi Ali's door.

As far back as 1985, the future was already looking bleak for Commodore. As the *L.A. Times* reports, Commodore International lost \$20.8 million in the third quarter 1985 compared to a net income of \$36.3 million in the same period of 1984, and sales were down by 48.5%. Ali joined Commodore in 1986, was appointed to the board in 1988 and finally became CEO in 1989. His experience in General Motors and Pepsico did little to turn around Commodore's slumping fortunes, or repair relations with the US retail

Ilkka Sjöstedt



CD32's expansion bay, from left to right: Power switch (behind the power connector), RF/antenna connector, S-video (blue), composite video (yellow), right & left audio (red & black). On the side: controller ports 1 and 2, AUX port behind controller port 2.

To complete the transformation into an Amiga computer, an Amiga 4000 keyboard could be plugged into the CD32's auxiliary port on the left side.

As for the promised games software, some of the major players like Ocean remained loyal, but the cost of cartridge-based Nintendo and Sega games had broken the bank and in spite of better

trade still smarting after Jack Tramiel's handling of affairs.

Tramiel was not a well-loved figure in the technology market from his previous Commodore days, especially with wholesalers and retailers, one of whom said of the Atari ST that after prior experience with Tramiel 'Our interest in Atari is zilch'. Another said that dealing with him was like 'dealing with Attila the Hun', echoing one of Tramiel's sayings that 'business is war'. His reputation hurt sales and his successors never recovered Commodore's reputation.

However, while the investors may have initially been happy with Mehdi Ali, his engineers were not and came to hold him and his management team in contempt. When Ali started cutting the R&D budgets new products languished. An example was the Amiga Advanced Architecture chipset (AAA) on which development commenced in 1989 but still wasn't ready in 1993, forcing a hasty rehash and downgrade to create the AGA chipset instead.

Dave Haynie – chief engineer on high end and advanced projects wrote: 'Things look bad at Commodore throughout the latter part of 1993. Massive staff cuts take place in the summer. Funds for new product development all but dry up by autumn. The long-awaited "AAA" project is halted for lack of money. It seems to be yet another case of defeat snatched from the jaws of victory.'[†]

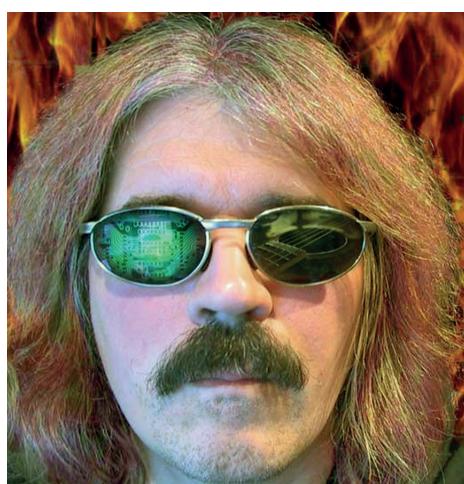
In the corporate world mistakes were

also made. When Sun Systems wanted to use Amiga's version of Unix for a low-cost solution, Commodore demanded an unrealistic fortune in licensing fees and Sun walked, killing the Amiga's expansion into the Unix market.

"It seems to be yet another case of defeat snatched from the jaws of victory."

By 1993 there was such unrest among Commodore stockholders at the failure to turn the company back to profit, at the lack of sales, and discontent at Irving Gould and Mehdi's style of management, that shareholders started to protest and insisted on sending representatives to all future board meetings held in the Bahamas.

As the share price plummeted, the final nail in the coffin would prove to be delays for the CD32 console. With a large shipment from the Philippines held by US Customs, the lucrative Christmas sales were lost, resulting in Commodore losing \$350 million in the process.



Dave Haynie, still vocal on all matters Amiga.

[†]The Deathbed Vigil video

I want to take you through a wasteland
I like to call my home.
.. Green Day



A West Chester Walkabout
1200 Wilson Drive, West Chester, PA

The Deathbed Vigil



and other tales of digital angst

being a documentary film
on the last days of Commodore



COPYRIGHT 1994, 2002
Dave Haynie

Captions from Dave
Haynie's 'Deathbed Vigil'
video documenting the
final days of Commodore
– edited on an Amiga
– included a moving
epitaph for Jay Miner.

In April 1994 Commodore International filed for Bankruptcy protection.

In those last days, Dave Haynie took his camcorder into the West Chester offices and recorded the scenes as the company died and employees were laid off. The remaining

staff burnt an effigy of Mehdi Ali in the car park and the speed bumps (loathed by employees) had the names of the executives and Irving Gould painted on them. Haynie's 'Deathbed Vigil' video came with credits and captions

edited on an Amiga, of course.

Just two months later, Jay Miner succumbed to the kidney problems that had plagued his life and died on 20 June 1994 at the age of 62. In an obituary

article in *Amazing Computing* magazine (September 1994), commenting on the sad fact that Jay lived long enough to see the machine he had done so much to create come to grief, his former CEO and Amiga Corp. co-founder Dave Morse was quoted as saying: 'When Commodore acquired Amiga in 1984, the legion of Amiga loyalists thought the

"When Commodore acquired Amiga in 1984, the legion of Amiga loyalists thought the world would beat a path to the better-mousetrap door. It didn't happen."

world would beat a path to the better-mousetrap door. It didn't happen. The Amiga languished.'

The bidding process for the bankrupt remains of Commodore was long and convoluted. Commodore UK proposed a management buy-out, keeping in place many of the same structures. In the same issue of *Amazing Computing*, when asked if he was heading up a Commodore management group to purchase Commodore and the Amiga technology David Pleasance put a brave face on it. 'Unfortunately nothing is certain. At the end of the day, we are very confident that our bid will succeed but it is really in the hands of the liquidators and the creditors.'

Pleasance made it clear that his eye was on the Amiga as a machine, not just Commodore. 'Everybody else is just bidding for the Amiga technology to apply to products they want to do themselves. This has no bearing on the

In remembrance of Jay Miner

Such giants are these!
Great shoulders bear so many
I stand among them

Keep the faith!

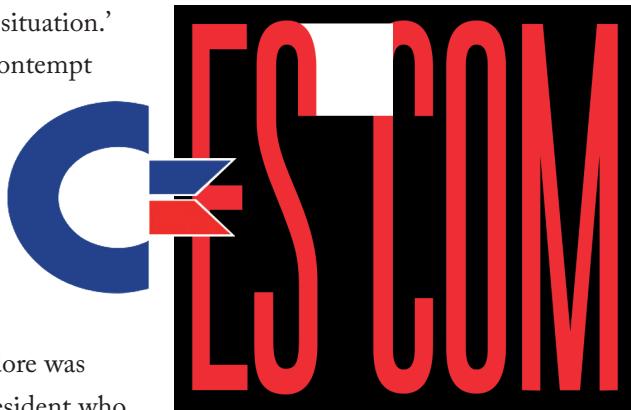
Amiga and it is not a healthy situation.'

It was also clear that the contempt felt for the West Chester management had not been confined to the engineering staff working there but extended to the UK arm too, as Pleasance said in the same interview. 'Commodore was messed up big time by the president who had no understanding of the market and totally ignored all the advice he received from his general managers all around the world.'

German PC manufacturer Escom emerged as a contender, with former Commodore Germany staff joining its ranks and by acquiring the rights to the Commodore logo (the stylised C= known as 'chicken-lips' in Germany).

Almost a year after the process started, Escom won the bidding above Commodore UK's David Pleasance. It was promising to resume production and bring forward new models (including the long-awaited Hombre CD64 machines equipped with the Hombre RISC chipset, another cancelled project at West Chester). Escom also invested heavily in retail outlets, buying up the failed electrical appliance chain Rumbelows in the UK. Commodore-branded PC accessories were the first sign of life.

With Escom expanding too rapidly and losing 185 million



German company Escom got the 'Chicken Lips' and then got Commodore itself.

Deutschmarks in that year, the company went bankrupt in July 1996 and the Commodore assets were sold on. First Dutch company Tulip Computers and then America's Gateway took on the Amiga. The operating system, now known as AmigaOS, became a separate entity offered for other machines.

A web search for Amiga today will bring up millions of hits, everything from screenshots to videos, forums to new games.

The Amiga refuses to give in. 

The Amiga lives on!

The AmigaOne X1000, running Amiga OS4 was released by A-Eon Technology and Acube Systems in 2012, to be followed by AmigaOne X5000/20, AmigaOne 5000/40 and AmigaOne X3500.



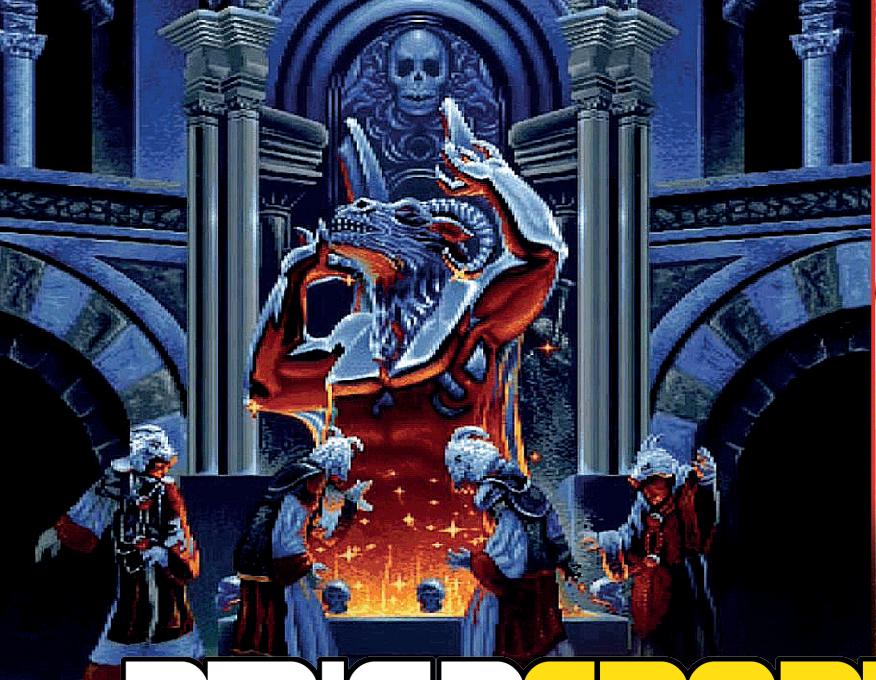


Amiga 1200

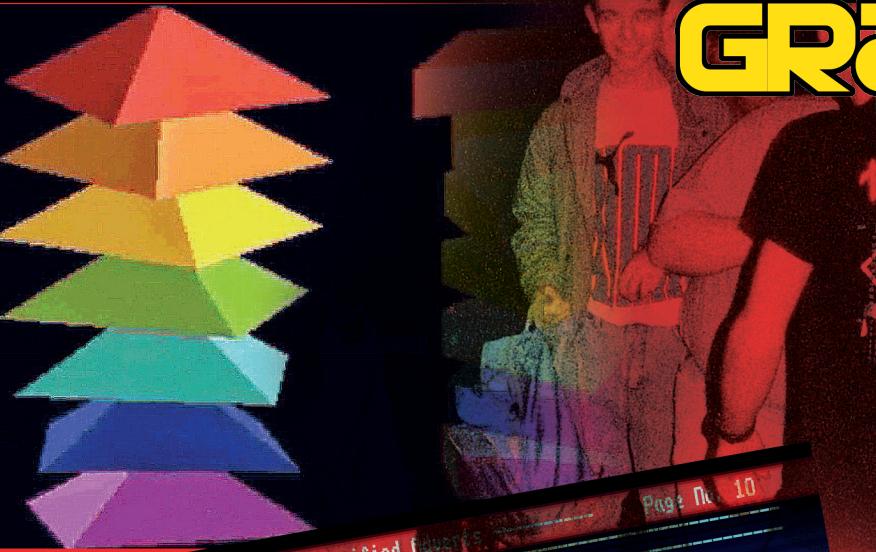
Launched October 1992

Aimed at the home user,
with AGA graphics and
the option of an internal
IDE hard drive.





amIGaCREATIVES GRAPHICS



ISSUE #2

Page No. 10

Classified Issues

In case you are not in possession of the accompanying STOLEN DATA paper Magazine, this issue is now available with DEL of SAE (now MAYHEM !!!).
EDITOR... NOSAH/DCS (PAPER)
KREATOR/ANARCHY (DISK)
ARTICLES... NOSAH/DCS
IRATA/RED SECTOR
DEL/MAYHEM
PARSON/DCS
MOLE/ANARCHY
JUDGE DROKK/ANARCHY
GONZO 'N' FREAGLE
COVER.... BRADY/NOT
DRAWINGS... SILVER/ERRORS
RAPHAEL/ANARCHY
LOD/KNICKERS
FAB/TRILOGY
PARSON/DCS

CREDITS

INTERVIEW WITH THE UP FRONT-TRILOGY-DOMINATORS Party.

Front cover by BRADY of NOT

It cost for this enlightenment only 30p + SAE if you live in the UK (Bank-Note in your own currency nearest to 1 pound sterling)

And what about the great artwork, approx. 30th MARCH.

FAB/TRILOGY

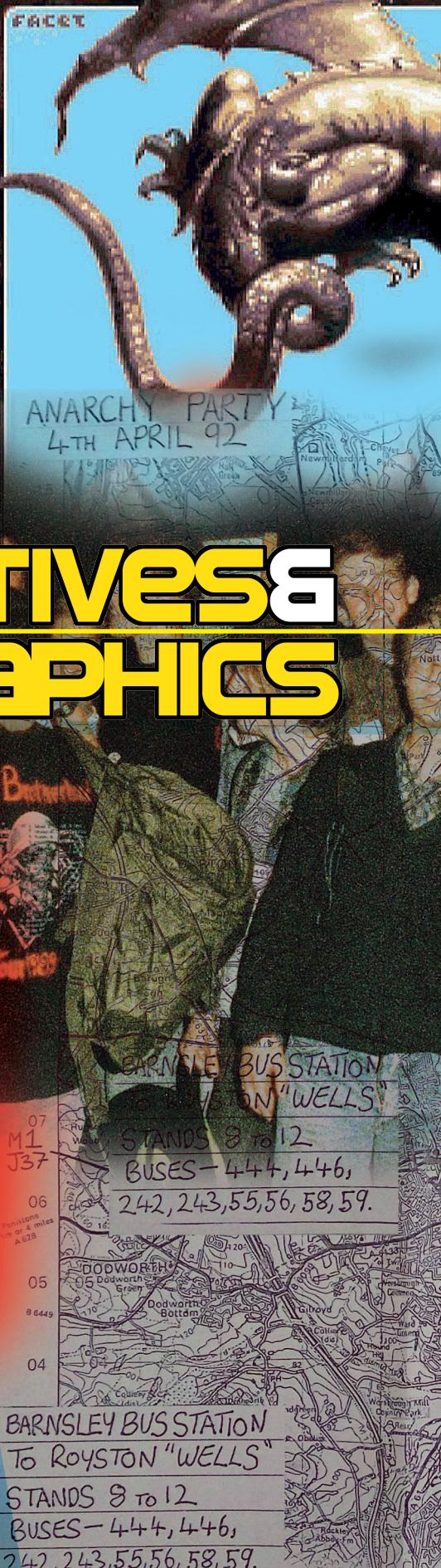
Three of your

in now, and don't forget issue

pick for the disk magazine

in the UK (Bank-Note in your own currency nearest to 1 pound sterling)

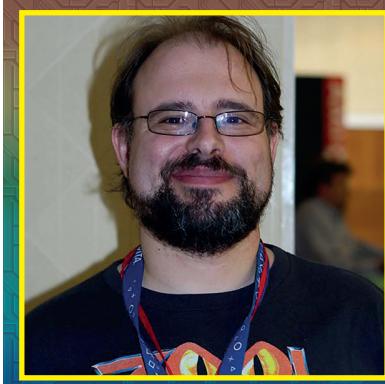
approx. 30th MARCH.



**SPRING
MELLODIES**
ZOOM

**PD/Shareware
The Amiga Demoscene
AGA, too little too late?**





Sven Harvey

Sven was part of the Infinite Frontiers team behind *The Final Frontier* diskzine and Holodeck slideshows and a columnist in *Micro (Computer) Mart* from 1999 to the magazine's closure in December 2016. Here he looks at Public Domain and Shareware on the Amiga.

PD or Public Domain software which is often referred to more recently and more accurately as freeware (rather than open source which is a different kettle of fish entirely) was a key part of the culture surrounding the Amiga platform from its rise in the UK and Europe. The PD scene included productions and applications that fell under several descriptions: freeware, shareware, licenseware, and various variations including the joys of giftware (where the author asked for a present to be posted to them).

The PD phenomenon arose from earlier days on the C64 and other formats, after distribution of software by listings you typed in became ridiculous. However it was with the generation of machines with 3.5-inch floppy disks that things really took off – the fact that you could literally write an address on a floppy disk label and pop on a stamp and nine times out of ten it would get to the recipient in a fully functional state certainly helped. Fortunately though most PD libraries had the foresight to buy padded envelopes, or slim boxes.

Obviously this is all very pre-Internet, but some people were getting hold of the latest PD productions from bulletin boards through dial-up connections on what by today's standards were incredibly slow connections with modems (and phone couplers in some cases). This required a bit of patience to download disks – an 880k disk downloaded over such connections in the kind of timeframe gigabytes of data does on the average broadband connections of today. For many people it was far more viable to get the disks posted out to you or pick them up at a local computer fair.

Piracy may have been a huge problem for the application and games companies, but PD distracted from that, to an extent, and offered a wide range of software to try out on your machine. It was a rather unique and incredibly important way to get software to end users for users developing things that had little or no commercial value – and an outlet for commercial developers to get demos of their work out into the community if they couldn't secure a slot on the all-important coverdisks on

magazines such as *Amiga Format*, *CU Amiga* and *Amiga User International*.

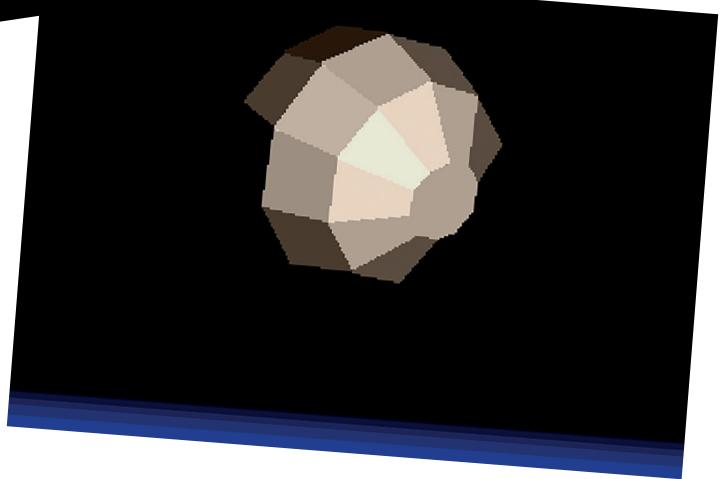
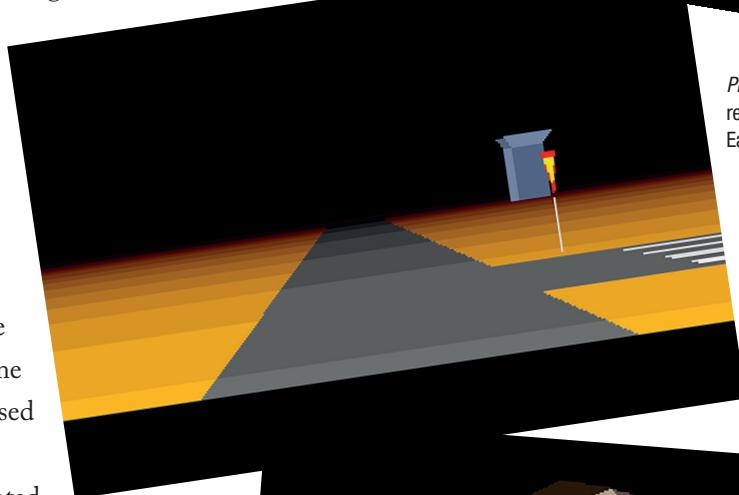
In fact one of the earliest memories for many of the PD dynamic was the rolling demo of *Shadow Of The Beast* (1989) that wowed people in computer shops up and down the country and encouraged the purchase of packs of floppy disks – after all the disk could copy itself!

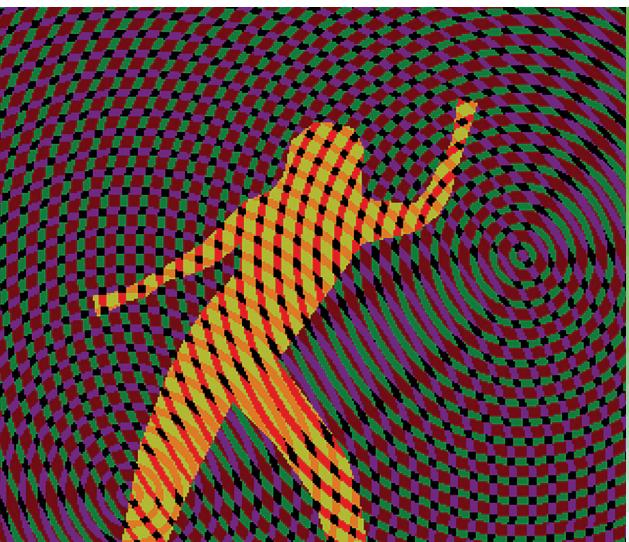
The rise of PD, especially on the Amiga, was pretty much down to the demoscene (*see the following sections*). It was at demoparties and swap parties that the culture of swapping your own work around took off (alongside casual piracy in almost every case), and megademos, as they were known, grew out of the fierce competition between groups producing cracktros, (demo intros on the bootblock of a cracked game). In time the very tools used by the demo crews would become some of the most purchased PD disks, along with the demos that everyone wanted and shared with their friends, if only to exclaim ‘let’s see an ST do this’!

Demo productions such as the *Budbrain Megademo*, *Enigma* (by Phenomena), *The Red Sector Megademo* and its follow up, *Cebit ’90, State Of The Art* (by Spaceballs) and *Jesus On Es* (by LSD), to name but a very very few, drove the interest in the PD libraries

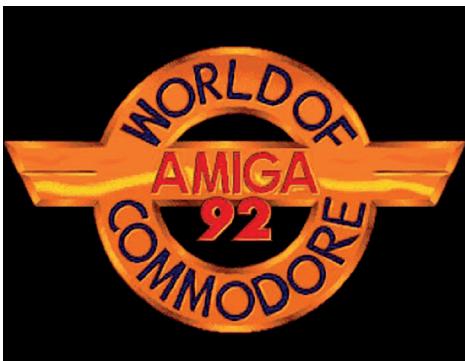


Phenomena by Enigma - released at the Anarchy Easter Party 1991.





World of Commodore 92
by Sanity, released on
29 November 1992.



with Amiga owners ordering disks by mail order to try out new productions they couldn't get locally. However the independent computer and game retailers that dabbled in the top PD productions soon found that running scene demos in

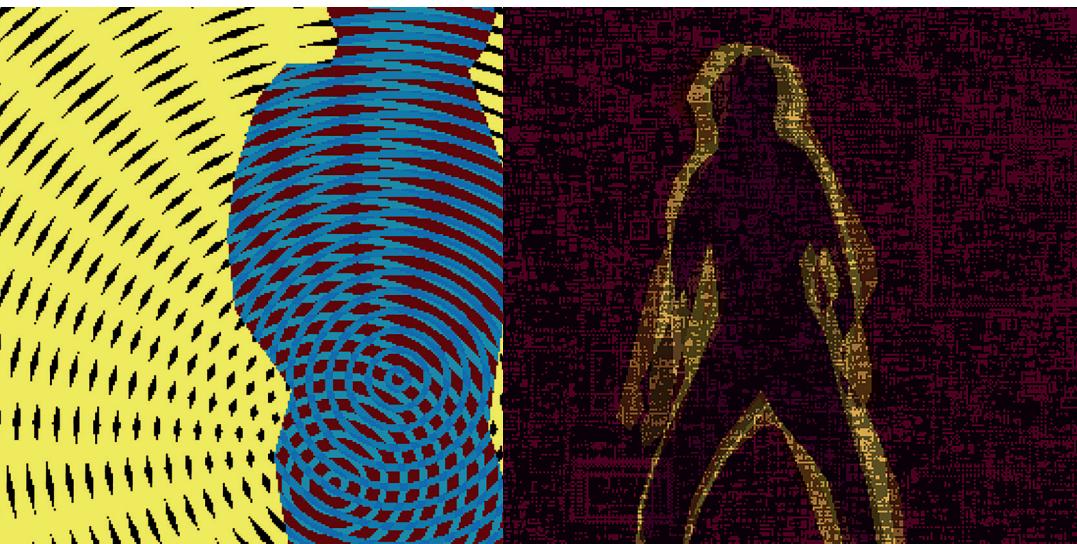
Star Trek – the Game of the Future of Mankind
by Tobias Richter and
Thomas Kruza.



their shops not only sold the floppies with the software on them, but the machines they were running on too.

The demos *World Of Commodore Amiga '92* (By Sanity) and even more so, *Point Of Sale* (by Digital) were the perfect illustration of this with Commodore specifically leveraging the demoscene to sell Amiga home computers. Scene demos sold machines, as I can personally attest to after using some to sell Amiga 500 Screen Gems packs in 1990/91. Of course PD included hundreds of games including 'classic titles' as *Mortal Kumquat III*, Tobias Richter's *Star Trek*, and *Deluxe Galaga*.

Possibly the most public way that the PD scene exerted itself into the public consciousness, however, was at computer fairs. In the pre-Internet purchasing days, it was the computer fairs that were a draw for those looking for bargains or the latest technology that hadn't reached the independent retailers yet, with local fairs taking place at weekends usually at least



State of the Art by Spaceballs released in December 1992.

once a month. An example of this was the All Formats Computer Fairs, which regularly used the National Motorcycle Museum by the NEC. A small PD library called Cynotic PD, based in Coventry, had a couple of tables at the event with a bank of Amiga machines running *X-Copy* to produce the various disks in the library on demand for the punters. Of course, as fans of the Amiga, it was also a place to set up machines with big televisions and a sound system and show the owners of other machines what the platform could do with scene demos – much to the joy of those in attendance selling Amiga machines. This was a scene repeated up and down the country and for those not in the demoscene itself, it was the fairs that were their place to celebrate the community around their machine of choice.

Though the demoscene and PD are inextricably linked, the memories of the classic Amiga as a platform usually segregate the demoscene as a separate

cultural phenomenon. This is probably down to the fact that the tools provided via PD libraries were what allowed Amiga owners to create, and in many cases produce software that would go back to the PD companies and enter the library too. The most famous and memorable pieces of software that got distributed this way were probably the *Red Sector DemoMaker* and the soundtrackers, both of which would also eventually make it onto Amiga magazine cover disks. The only slight problem was that neither of these were actually PD!

The *Red Sector DemoMaker* as produced by TCC designs and *Red*



The PD libraries

Offering disks from as little as 75p plus postage, the PD libraries offered a plethora of software to those not able to go on-line quite yet. All this software was available on demand, with no actual stockholding required, bar a set of master disks and blanks to copy onto, with cash and cheques being sent through the post,



Opposite page:
Megademo by Red Sector Inc. – released in September 1989.

Sector was actually a commercial product released by Data Becker of Germany (it actually came as a disk within a hardback manual that was sold as a book officially). Unfortunately many of the more unscrupulous PD libraries copied and sold the disk as PD even after it was pointed out it was in fact commercial. The software actually ended up on the disk #18 of the cover mounts on *CU Amiga*.

Karsten Obarski's *Ultimate*

or a pile of disks coming back from a computer fair. It's fair to say there were a few less than honourable PD libraries that also pirated software (like *Red Sector DemoMaker* and other commercial games and applications) but in the main they were a great addition to the Amiga market.

Some of the PD libraries also fostered relations with the demoscene itself, and none more famously than 17-Bit Software. Keeping tabs on the demoscene paid off for 17-Bit when after growing out of the Microbyte computer shop chain, a development team called Team 7 approached 17-Bit regarding their beat-'em-up game in development. As a result of that the team and the company combined to form Team 17 to release *Full Contact*, recruiting musician Allister Brimble and members of the demoscene in the process to produce further games. The 17-bit library of disks was put on CD-ROM by Almathera. The rest, as they say, is history. 

Soundtracker (disc ST-00) and the various sample disks that went with it (ST-01 onwards) proved to be far more popular than other music production methods for the machine. *Soundtracker* (for short) was actually a commercial release, but after poor reviews and bugs coming to light, the software was cloned to produce *Noisetracker*, and potentially more famously, *Protracker*. It was via the *AM/FM* disk magazine, from Bjorn

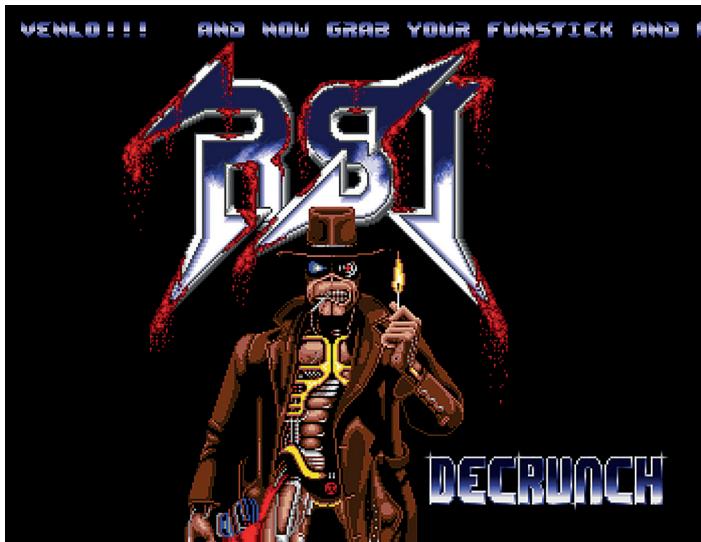
Lynne, that *Protracker* came more to the public consciousness as the 3.1b version of the program formed part of the *AM/FM* licenseware release schedule as the third 'special' disk release and then, a little later, on the *PD-DIY* coverdisk on *Amiga Format*.

Music trackers combined with *Deluxe Paint*, (a version of which came with almost every Amiga sold in the UK and Europe), *DemoMaker*, learning to code directly, or using AMOS or Blitz Basic were just some of the many ways that Amiga enthusiasts were inspired towards creativity.

Disk series such as the Fred Fish disks, full of 'crunched' utilities, provided the software to allow a bootblock, or AmigaOS startup-sequence to trigger animations and music, and the Assassins game disk series for inspiration. All of this combined in the production of amateur software left, right and centre, from slideshows with music, to music disks, to disk magazines to basic games.

This is where an awful lot of the second and third (post 8-bit) generation of British coders, graphic artists and musicians came from to go on to make later Amiga titles, and then move onto the PlayStation generation. You probably wouldn't have had the likes of *Pinball Dreams*, *WipEout*, *Battlefield* and *Little Big Planet* without it.

Public Domain in this form fell into obscurity in the mid-1990s. The death of Commodore and the move of the general public away from home



The licenseware system

AM/FM was a disk-magazine that was distributed as licenseware using a rather clever method. Bjorn Lynne aka Dr Awesome, who produced the mag, sold disk labels to the licensed resellers such as 17-bit Software, with the labels denoting these were officially sold copies of the magazine. This continued with the first release of *Protracker* 3.1b, which

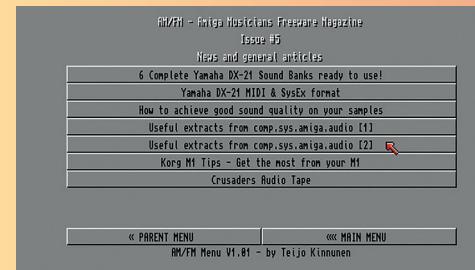
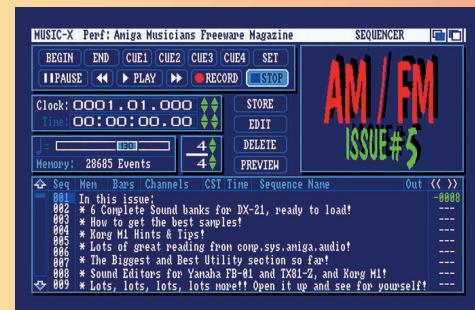


computers to PCs and game consoles all played a part, as the creativity of computing seemed to disappear. With the Amiga specifically, dial-up connections were getting faster and technologies such as leased lines, ADSL and fibre broadband were becoming tangible options as the internet took root.

The distribution of hundreds of disks worth of software on CD-ROMS for the CD-TV and other CD-ROM equipped Amiga machines made buying software

was an official *AM/FM* release with money going back to Cryptoburners, the programmers.

A very similar system was also adopted for the releases of *The Final Frontier* (a *Star Trek* disk-mag), and other releases from UK based Infinite Frontiers for their Holodeck slideshows and other disk-mags. 



on floppy disks seem rather clunky, especially as AmiNet, the online Amiga software repository, was gaining in popularity, as downloading ADFS (Amiga Disk Files) and other crunched forms of software gained traction.

Over time what was the PD movement on the Amiga and other computers of the late 1980s and early 1990s simply morphed into the open source movement of today. 

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Anarchy and the Demoscene

In the early 1990s Anarchy set out to rule the Amiga demoscene. The team created some of the most hardware stretching and innovative demos. Here, founder and organiser Judge Drokk – aka Mark Hellewell – recounts the story which starts with school-playground piracy.

After I left school I spent a year on some kind of information technology course where I met a geek we called ‘Prof’. Like me, he owned a Commodore 64, and also like me he’d been a school playground pirate. We lived only a couple of miles apart and one day I met a close neighbour of his. This guy – let’s call him Busby – was old, at least as old as forty seemed to one aged seventeen.

To an impressionable lad, Busby seemed extraordinary: an unemployed middle-aged software pirate driving an old car, with an aura of secrecy, who never gave a straight answer to any question. He copied pirated C64 games

The Doughnut Cracking Service's crack intro from *New Zealand Story* on the Commodore 64.

tapes on an unrelenting daily basis. Busby quickly became my No.1 go-to for games. I soon found out where his illegitimate loot came from and what made it different from any spoils of piracy I’d enjoyed before.

Busby liked to show off. He made a point of having something you didn’t before giving it to you regardless. One particular visit he had some titles I’d never heard of, a handful of US imports – games like *Chilly Willy* and *Phantom Karate*. But what really caught my eye were the on-screen ‘tags’ of the guy who had first made the copy from the original cassette or disk emblazoned on the title screen – ‘Broken By Black Bob, F++K Copyright’. How this guy set the game free from the confines of the commercial ecosystem seemed more important to me at that moment than the game itself. What was I seeing? My first crack intro! I was standing on the edge of the rabbit hole, and about to take the red pill.

The demoscene originated in the early world of piracy: crack intros found themselves detached from the illegal software that spawned them and started a



life of their own. The mid-1980s onwards became a Renaissance period for the phenomenon. My personal experience started as an addiction, became an obsession, and led to a way of life.

Moving up to Amiga

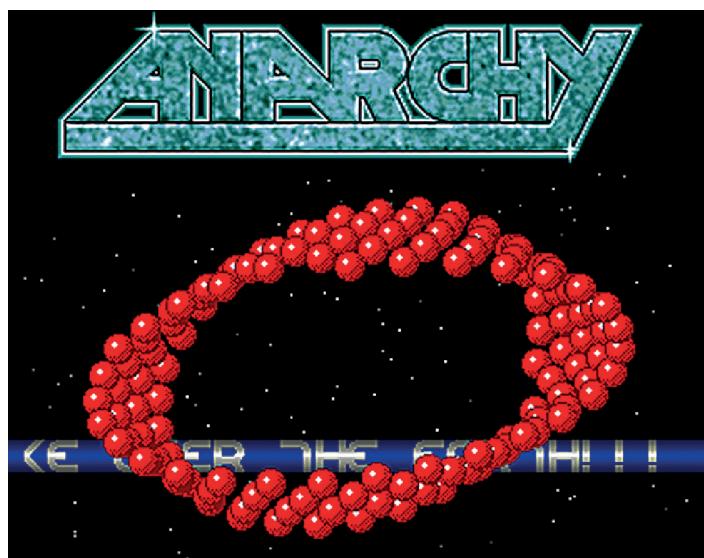
Being drip-fed new software like a junkie from a dealer was soon to become a thing of the past. I was growing up and discovering the scene on my own feet. I interacted with the scene through ‘trading’ – posting packages of cracked protection-stripped games (still for the C64), while sharing a pen pal-style letter with every package containing news of the day, both of my own and what others had told me via the same method. This simple form of communication – trading – meant everyone was connected.

News travelled slowly, at least on paper. Fanzines soon followed, such as *Illegal*, produced by Jeff Smart of seminal cracking collective Triad, and *Iguana*, edited by a guy who called himself No Original Software Available Here (NOSAH) of the Doughnut Cracking Service. His scene obsession rubbed off on me. I was fired by his drive and that led me to form my own C64 group. I had enough talented friends to pull into a collective creative unit and The Infiltrators was born in 1987.

I learned fast about how the scene worked, while making friends with various respected demo and cracker groups. But at the time I could only think of promoting my name (the

quickly thrown together moniker Judge Drok) and my group. I craved adulation from those above and those below who were just starting to discover the scene.

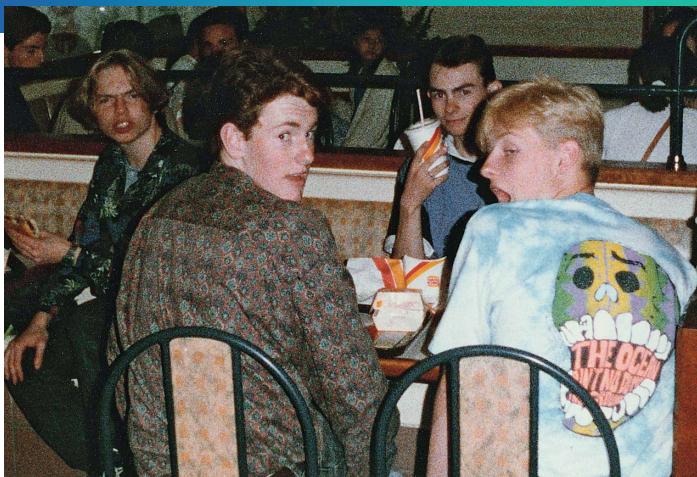
This happened close to the end of the Commodore 64’s life, though for me it was less of an ending than a beginning, this time with eyes wide open, armed with knowledge, sensibility, the wisdom of age and, more importantly, with a new group. ‘Hello Amiga, I’m Judge Drok,’ I announced. ‘And we’re Anarchy.’



Same game, bigger pitch

It was 1989, and in its first month Anarchy was a group of four, but we picked up some new friends, and with friends came software and my first experience of the Amiga’s flavour of demo. The name of the demo escapes me, as does the group responsible for its creation, but what I saw didn’t exactly impress. I was anticipating the demoscene’s answer to the official bouncing ball promo. I was expecting

Early Anarchy work
Bob (Binary Object)
Intro by Kreator.



Anarchy team members Kris and Hammer at the back, and Mystic on the right – and a forgotten name in the middle.

to hear Rob Hubbard, Matt Gray and Martin Galway being given their P60s on the spot. What I got was screeching horn samples and panpipes, and a visual accompaniment that complemented the tune...perfectly!

"Reputation in the demoscene was everything."

Hammer, our only coder at this time, a friend from our C64 group, was putting together his first Amiga intro. We were taking baby steps, but we were proud of our first. It slipped out quietly. Maybe nobody even noticed it. Our reputation was intact. Reputation in the

Banger and Mole of Anarchy at the front, with Jester of the Quartex team at the centre rear.



demoscene was everything. However, we were still new and pretty much undiscovered beyond our own address books. At this time my own address book was gradually filling with names beyond my own team, although when you're new the big guys don't want to play with you, so you play with your current contemporaries...or worse. One such 'worse' team had just picked up a coder new to the Amiga called Kreator. I intervened. We got our first break.

I stole Kreator from his nest because I saw him as a threat to my own fledgling Anarchy group. Kreator changed Anarchy. Two small one-part demos proved he could code. He could do what others were doing, and just as well, and more importantly he was doing it better than we had done it before. Beat



yourself, and if you're good enough you'll beat the others too.

Scream if you wanna go faster

Goodbye to the 1980s. It was the decade that matured us, shaping us into the people we were in 1990. The team expanded quickly, and a group needs connections within the demoscene as a whole. The best way to achieve this was through mail traders. Scene pressure took its toll on two of the three fresh faces from the south of England who filled this role for Anarchy, but Mole took up the slack to become a true trading hero.

Among the British Amiga demo teams in 1990 Slipstream and Magnetic Fields were two outstanding names. Slipstream were predominantly southerners and Magnetic Fields hailed

from the Sheffield and Rotherham areas. Of British Amiga demoscene musicians only one stood out. His name was 4-Mat and he was in Slipstream. As a fellow southerner Mole knew him. We made the approach and 4-Mat joined Anarchy.

The creation, growth and continued success of a demo team is reliant on finding, building and mixing a team of talented individuals who fan the creative flames of each other's work during a process that ultimately involves many man-hours of intensive but pleasurable labour. There was no healthy paycheque for this work. Adulation, admiration and, in some cases, a little envy was the reward for a completed demo presented to Amigadom. Kreator's numerically titled *First Demo*, released at what would be Anarchy's first visit to a British demo party, was about to tick all those boxes.

Magnetic Fields hosted the 'copy party' in the cold early months of 1990 in a South Yorkshire town. It was a revelation on many levels. I'd read reports of parties in hacking scene fanzines, large halls, hundreds of people, a kind of computer-led version of the popular underground acid raves of the late 1980s and early 90s. This was a little different. It was held in a normal terraced house on a normal street on the outskirts of a normal town. Fifty to sixty visitors attended and over the next day and a half we got to bond with other teams.

Sofas were removed from the living room to make space for more standing bodies. Probably no more than two

A bunch of Anarchists, including Mediator, Mystik, Mole and Kris. Kreator is at the very back in the centre, looking straight at the camera, with his brother Raistlin at the far right and schoolfriend Pioneer in front (also with glasses).

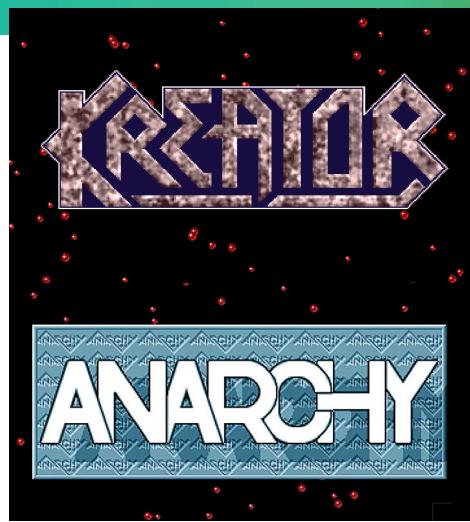
Amigas were set up downstairs where the latest cracked games constantly played. Sleeping conditions were basic – later that evening a guy stepping over me woke me up. He wore a badge denoting his scene name: Lee of Oracle. This took me right back to the first sighting of a cracked game and an on-screen tag left by the culprit. Now, a year later one of them was climbing over me in the dark, trying to find the bloody loo!

Hammer, Mr Big and myself attended as Anarchy representatives, pockets stuffed with blank 3.5-inch disks and two containing our entries into what would be the group's first competitive output...and we walked off with the demo and music prizes. Anarchy had just arrived on the scene. Suddenly everyone wanted to be in Anarchy. Success drove growth at a speed I could never have predicted.

Winning the scene

If we were moving fast, so was the competition. We may have won a slice, but the double whammy of Scoopex's *Mental Hangover* and the Red Sector *Megademo* put things back into perspective. I felt the British demoscene just wasn't trying. 'That'll do, it's good enough,' summed it up with a shrug.

Since stills of Amiga demos don't really do them justice, it's probably best simply to admire the titles: Scoopex's *Mental Hangover* and Red Sector's *Megademo*.



Fuelled by winning at the Magnetic Fields party and driven by exciting European competition, Kreator and 4-Mat began work on a new production. Kreator's music collection inspired *Phantasmagoria*, a labour of pure orchestrated love: a three-part demo with an unending filled-vector finale. Pretty much nobody in Britain was doing 3D filled vectors. Scoopex and Red Sector hadn't done them this well before. The epic tune by 4-MAT was perfectly synchronised with the exciting on-screen action, the two working hand-in-hand perfectly. Twenty-five years later random quotes from nostalgic forums spell it better than I ever could: '4-Mat's music is one of the best ever,' and 'I never saw 3D-vectors that were calculated that correctly before *Phantasmagoria*.'



Thanks to Kreator and 4-Mat we won our second demo party competition, decimated the British demoscene, and took on the giants of Europe. It was time to measure up for the crown. At this point we were little more than half way through 1990 and Anarchy was rapidly becoming a top contender. Why stop there?

Mole – Anarchy's very own socialite – exploited his address book further, introducing me to stylish and exciting programmer Dan Scott, a member of Slipstream. Dan, it turned out, had itchy feet. I scratched them. Welcome to Anarchy. At about this time I received a letter from Sweden that would change the size and weight of our group overnight. Teeze and his band of Swedish Amiga devotees, recently separated from their own group, promised to give us all their energy if we took them under our wing. This swelled Anarchy's ranks by at least ten, with Teeze controlling his members in Sweden and control of Teeze down to me. A few more joined us: the wonderfully talented

Dutch artist Facet, along with English scene devotees Banger, Kris, and an undiscovered musical talent called Nuke, a guy from the north of England who was new to the scene and filled with untapped musicality.

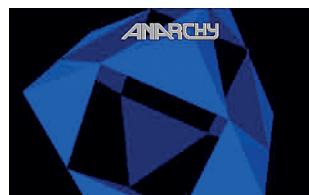
While our British membership remained fairly static Europe was rich with frenzied talent and between 1991 and late 1992 Anarchy became a magnet for upcoming and established gifted individuals. As the membership grew

the output soared. Hardly a week passed without something new appearing bearing the Anarchy motif. It was almost total

saturation of the scene. This came to a head with two complete rival group divisions becoming part of Anarchy. The Silents of Denmark (including 'Sunjohn' who was the famous coder of the epic Silents production *Global Trash*) along with all of the Silents French membership.

A thousand things made Anarchy one of the most exciting times of my life and a handful made it one of the worst,

3D Demo 2, by Icronite, Madfreak and Rush (left); and graphics by Slash (above).



Phantasmagoria by Kreator and 4-Mat of Anarchy



Hammer – 'I had to let him go...'

particularly Hammer. His latest work was not up to scratch. It was like looking back at 1989, if not worse. I had to let him go. Hammer was a proper friend from the C64 days and I was giving him the long walk.

Let's Party!

No matter how many friends you had in other groups or your own, the fact was that most of the time few in the



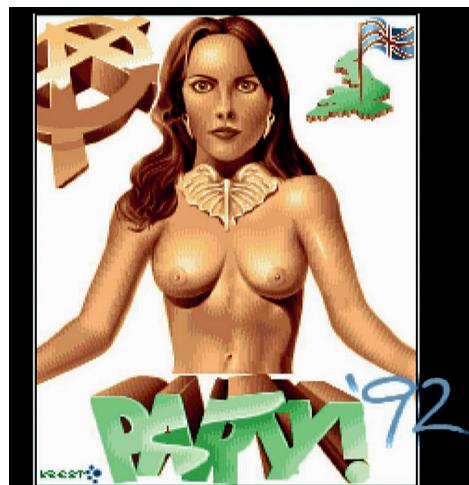
Banger, Mystik, Judge Drok, Mr Big and Kreator at the Anarchy 'Internal Party'.

Right: the Anarchy Party! 92 invitation demo; art by Krest.

scene ever got to meet – unless like Kreator and Raistlin of Anarchy, they were brothers – except at the Computer Entertainment Show or the Personal Computer World show in London. Realising we got on so well at those, many of us spent a week at the house of our artistic member Mystik while his parents were away. It became known as our Internal Party, and spawned the neat demo *The Fury*, produced upstairs by Kreator and Mystik, with music by

4-MAT. It also spawned the idea of holding our own party.

The first we called The Anarchy Winter Conference 1991. Mr Big booked a venue near his home, a school, most likely for his own convenience. It's not known whether he investigated the premises' suitability, but what followed was a disaster. The power supply tripped almost as rapidly as a drunken clown with his shoelaces tied together. Holding an Amiga demoparty for hundreds of fee-paying guests who lost their work and their patience every ten minutes was akin to being put into shark-infested waters with a collapsing safety cage!



Our second we called Party! 92, which took place on 4 April 1992. I used my local knowledge to find a suitable venue with easy access from the motorway, robust power supply, good parking, tables, a stage and, most importantly...a bar! After the near disaster of the previous year we were unsure how many would take a chance on our follow up, although even I was surprised when we sold out the

venue in just a couple of weeks and with months still to go. Party! 92 became the largest attended event in England at that time, even gaining early promotion in a popular Commodore magazine a month before.

We tried something not done before in the UK, namely sponsorship. The demoscene has always had an uneasy relationship with public domain software providers. They were either largely ignored or hated. Some of the less scrupulous even lured enthusiastic mail-traders to back up their entire collections for them as an easy boost to their PD stock, promising a healthy cheque as a reward...that no one ever received.

Thinking that the UK's biggest PD supplier might like to redress the balance, we approached Wakefield's 17-Bit Software and they sponsored Party! 92. Truth be told, success was mixed. One rule for all demo competition entries was they had to feature a statement that their submissions would be distributed exclusively by 17-Bit. Two days after the party most groups re-released their entries with the aforementioned message removed. You can't win them all.

Reviews were generally positive and demoscener Mick Dagger of NightShift Productions filmed the party. Partygoers from all over ordered VHS copies. Many hundreds were sold and shipped worldwide to customers. It remains to this day the most popular party footage of the British Amiga demo scene.



The biggest party in the world outside of the UK had taken place the year before in Aars, Denmark, a cooperation between Cristal:Silents and Anarchy. A staggering 1,252 people attended. The party was mostly scouted and organised by Trix of Anarchy. A huge number of entries – twenty-six in total – were submitted for the main demo competition. And then in the following year The Party! 92: The Final completely overshadowed 1991's success, once again organised by Cristal:Silents and Anarchy. A mind blowing 2,500 attendees made this the largest and most successful demoparty in the whole world at this time, and it became a forerunner of the annual

Assembly Party that takes place every Summer in Finland.

Read all about it!

The demoscene was a wonderfully well-connected entity. A global collective in which varying means of communication

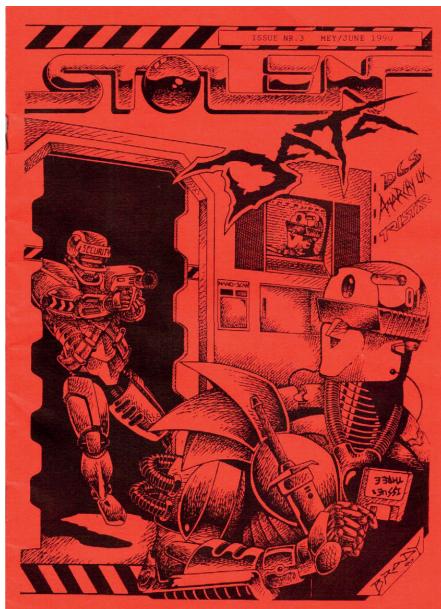
Anarchy demos on sale at a PD software stand at CES in London, 1990.



Mick Dagger of NightShift Productions (the coolest moniker in the demoscene was given him by his mother!) interviews Facet of Anarchy at Party! 92

joined everyone. It was a major feat considering the limited technology available to the common man of the time.

When you needed reliable information rather than word of mouth



Stolen Data paper magazine edition, issue three from May 1990.

for calling it *Double Barelled* or *Shotgun* were overturned by NOSAH's *Stolen Data* – very apt! Sadly, real-life problems arose from NOSAH's employer, the British Army, which ordered him to quit the scene or the Army. The print magazine did not survive without him, but the disk version was to flourish, despite a few missteps along the way.

scene magazines were the place to find it. My old friend NOSAH enjoyed great success in 1988 with his bi-monthly *Iguana*. His new idea was a disk-and-paper magazine – he wanted a text-lite cover disk to accompany each issue of the magazine. My ideas

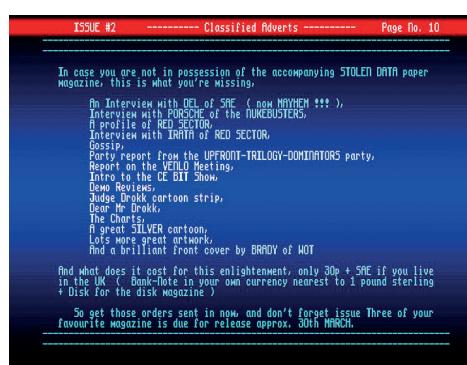
Disks were so much easier to produce, duplicate and distribute than paper magazines, but *Stolen Data* had a rocky ride in its first couple of years. Now a disk-only magazine, it required a vastly increased level of content, but the editorial styles of Anarchy members Kris and Mr Big lacked somewhat and *Stolen Data* suffered as a result. After Mr Big left the scene after Party! 92, I took over the editor's role.

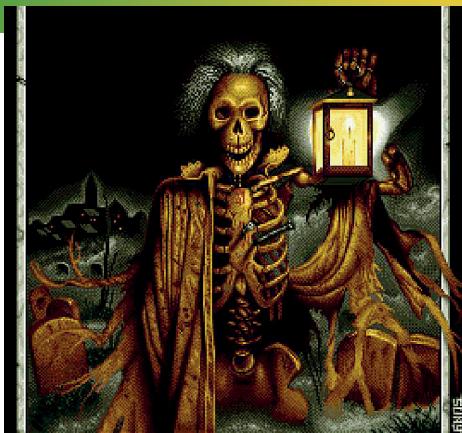
I relished the challenge of breathing new life into the magazine and together with Kreator's coding talent and design ideas we built a whole new *Stolen Data*. The hottest coders, artists and musicians only made up a small proportion of the scene. I wanted to mine untapped resources. I wanted to discover passionate individuals who yearned to find a way in and had the skills to achieve their goal – and they were out there, individuals unable to break into the scene through more traditional methods, who wanted to gain recognition for their skills. I named them the *Stolen Data Team*.

Together with Anarchy firecracker Trix, who took on a greater editorial role, the new magazine was reinvigorated and expanded to two disks packed to the gills. The first contained the magazine, the second featured reader submissions in the form of an Art Gallery, a Music Jukebox and the scene charts, with our self-chosen Top-10s of the month.

CU Amiga Magazine described our new-look as 'the future of magazines'.

The second issue of *Stolen Data* with its less than satisfactory 'early design style'.





I was tickled pink to say the least. From bottom of the popularity stakes to better than half way to the top in just one issue; a top three after three issues.

Unfortunately there wasn't enough time left to take it right to the top. The tides were changing, the sky was darkening, but not at least until Anarchy had taken the world.

At the summit...and the fall

Managing a demoscene group was similar to managing a pop group. In place of every album we delivered a demo, and every intro was our latest single...and there was the Eurochart.

Votes were collected worldwide, compiled and results distributed in a polished digital rundown of the best in the demoscene by Scandinavian demo team The Crusaders, and later Static Bytes. With eleven categories and twenty places in each was there room for everybody? Not a chance in hell!

Anarchy was No.2 in the Top 20 Best Groups category in the January 1992 chart and the Silents occupied the top spot. You had to love 'em. We were quite like each other in many

ways. We'd both been around a while. We were truly international teams, even working together on the world's biggest international demo parties at the time. Then they teamed up with Crionics

Left: A fine sample of graphics from the *Stolen Data* Team's art gallery.



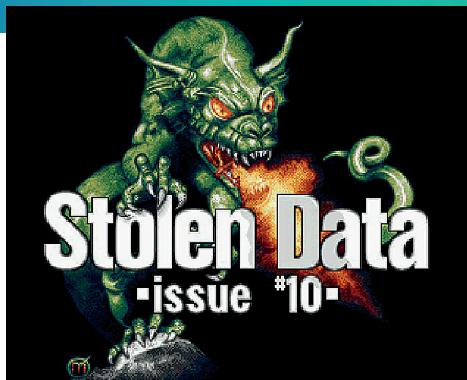
to create the ground-breaking demo *Hardwired*, which inevitably pushed them to No.1 once again in July.

But Anarchy was gaining momentum. On a day-by-day basis our relentless release schedule was as staggering as it was overwhelming. It was then when the French membership of The Silents asked to join the ranks of Anarchy. The snowball suddenly became an avalanche. Number one was inevitable. In September 1992 Anarchy was crowned the No.1 demo group in the world. It was amazing, elating, and yet it left a weirdly empty feeling. Where do you go now you're at the top?

Simple: jump off.

It was 1993. Winter was coming to

Anarchy knocks the Silents off the top of the Eurochart in 1993.



an end. It had been a busy few months. I was tucked away putting together #10 of *Stolen Data*. I didn't know it would be the last. The *Stolen Data* Team, together with the help and creative input of Trix and new code and design by Kreator, was proving a great success. What a shame there was never an eleventh issue. Oh

"When they were on top they produced some of the best-remembered demos ever."

how the headlines would have read if I'd been around to write them myself. Treachery, backstabbing, betrayal – those are just the nice ones. 'Mutiny rips apart world's number one Amiga demoscene group. Founder pulls plug.'

The story behind the headline that never was reads: 'Dan and Nuke, who became the cosiest pair in Anarchy while working together at renowned game studio Core Design, conspired with Dutch Anarchy artist Facet along with everyone they had recently worked with in Anarchy to take a leap of faith and join them in a new team. A case of 'nice group, we'll take it, just don't tell the boss'.

They didn't. No call, no letter, nothing. I never spoke to them again.

Within days I had swiftly ended Anarchy and completely disassociated myself from the scene by selling my Amiga. With that my demoscene days were done. This may seem like sudden death, but that is exactly as it happened.

The retrospective Amiga demoscene site ExoticA.org wrote: 'Anarchy spent some time as the definitive "super-group" of the demoscene, before it grew too big and simply died. When they were on top, though, they produced what are some of the best-remembered demos ever.' I would be happy to see that engraved as an epitaph on the group's gravestone.

Maybe it took place just in time? After all the Amiga's free-fall into oblivion was not far off. How long the news took to disseminate throughout the membership and for them to move on I never knew. Kreator, 4-Mat, Mystik, Kris, Del and Mole ended their scene life along with me. We had climbed out of the rabbit hole and back into the real world. The story was over.

Aftermath

Dan Scott and later Martin Iveson (Dan and Nuke) worked in-house for Core Design on hit titles such as *Heimdall*, *Chuck Rock*, *CarVup* and many more. Derek Leigh Gilchrist (Del) worked for Codemasters during his tenure at Anarchy, and has since worked on scores of titles including the original *Tomb Raider* and its first sequels. Mathew Simmonds (4-Mat) raised a few eyebrows at Core when he

created the tunes for *Chuck Rock* and *CarVup* – once the games were published everyone in the know realised they had been written for two previously released Anarchy demos. Mat wrote soundtracks for games as diverse as *Dizzy: Prince of the Yolk-Folk* and *Silent Hill: Shattered Memories*. Dan also caused a stir at Core when he wrote an intro for one of the most notorious cracking groups of the time, Skid Row. He soundtracked his code with what was to become one of 4-MAT's most iconic chip-style tunes, the wonderfully melodic *LFF*. The resulting intro was used on the front of the cracked version of the Psygnosis/DMA Design mega selling *Lemmings*. Dan even signed the intro 'Dan of Anarchy', visible on screen throughout the intro.

Jussi Pietilä (Bruno) from Finland later went on to work with Maniacs of Noise, and sadly passed away in 2008. Martin Iveson (Nuke) is now a music producer, and DJ. Kreator's brother Raistlin (Robert Troughton) is MD of Coconut Lizard Studio, and previously UK general manager of Epic Games (*Gears of War*), co-formed successful studio Pitbull Syndicate and also managed a team that worked on Unreal Engine 4, and has a cv sprinkled with game titles worthy of name dropping such as *Destruction Derby*, *Demolition Racer*, *Wheelman*, *Test Drive 4, 5, 6* and more. If Anarchy were a single development team I couldn't possibly think of one that could compare. It's a



shame then, in some ways that a chance to turn Anarchy into a game studio by itself came a little late.

Around the middle of 1993 software publisher Black Legend invited me to project manage a team to develop a new Amiga game. It already had a name – *Fatman: the Caped Consumer*. But Anarchy had passed, everyone already had a job, and some people I no longer wanted to talk to. I declined the offer and never mentioned it to any previous members of Anarchy, or in fact anyone. The game was eventually completed, published and released. It turned out to be a playable if somewhat average superhero platform game. What might have been if certain paths of destiny had been laid in altogether different directions is anyone's guess. It's probably wise not to ponder the question.

Black Legend
Software's *Fatman: the Caped Consumer* might have been an Anarchy-produced game if fate hadn't decreed otherwise.

Anarchy's final logo, an elegant epitaph. 





Scoopex and the Demoscene

Photon, organiser of Scoopex, shares the group's fascinating story – from cracking games to being a force in the demoscene. From 1989 until today Scoopex has been an essential part of the Amiga's history.



Scoopex has had quite a few ocs firsts. *Mental Hangover* was the first trackmo. Make a statement, change the scene. From then on, all groups made continuous, track-loaded demos to win compos.

Scoopex was born in Austria in tumultuous times for video games. All hell was breaking loose in Germany. Police had just clamped down on piracy and one of the C-64/Amiga groups targeted was Megaforce. Coming from Megaforce, Ranger and Shark the Master founded the group under the new name we know today, Scoopex. Would it become a pure demoscene group to evade the long arm of the law, or would the

cracking and swapping continue?

In January 1989, we released our first demo with coding by Crazy Typer and graphics by J.O.E., promising a new generation in software piracy and a row of high quality productions. The prophecy would turn into reality before the end of the year.

But we had a big problem: having a new name erased all previous reputation. To build an international reputation from nothing required someone with contacts and a strong will to succeed. This person was Ranger of Scoopex.

'In the early years Ranger's word was always the law, the only two members to ever influence his decisions were Shark the Master and Slayer', recalls TMB, one of Scoopex's members. Members always joked saying Scoopex was not a group but a religion and Ranger its divine leader – I think it was the member Reward who came up with the term Rangerism!

'Ranger's allies were mostly the Subway/Spreadpoint members and Irata/(T)RSI. He liked to start wars with everyone who said something bad



about the group (I guess we all did). But official conflicts were only short-lived for a few groups like World of Wonders, Paranoimia, and Storm – the competition, if you will.'

Today, members might not respond favourably to commandments from above, but at the time, it yielded results.

With pack disks, intros and cracks coming out at a rapid pace, the group quickly expanded beyond Austria's borders. The first countries to get Scoopex divisions were the UK, Sweden, and Finland. The expansion started in England, with a group called Share and Enjoy (SAE). This group had already collaborated with Megaforce on intros and on the first *Amazing Tunes* music disk, had a pack disk series of its own, and had members that would go on to form Anarchy.

In continental Europe, Scoopex was starting to establish itself through their excellent pack disks – the Rangerpacks – perhaps the go-to completist collection of demos released in Europe at the time. But with the Scoopex and SAE *Megademo*, Scoopex was not only established with crack intros, but also pure demoscene releases as well.

Photon adds: 'At that time in 1989, it was seeing the *Glory Stars* demo in person at the Digitech Summer Conference that caught my attention and alerted me to the greatness of Scoopex. Even though it wasn't a major release, something about it made me stop and look and listen.'



The formation of Scoopex Sweden also took place in this year, although it was unfortunately brief, with just the one demo release – *B.I.G.* featuring members Jesus and Merriam and Uncle Tom. He had already contributed to Scoopex and SAE in our *Megademo*, but he would come back again and again as a star of Scoopex.

Despite the little-known *Megademo 2* and *Glory Stars 2*, it has to be said that 1990 was the year that belonged to

The Scoopex *Mental Hangover* demo sits at No1 in 1990.



The Breakpoint 2005 winner, *A Dream 2* with code by Stingray, graphics by Noogman, and music by Ganja.

Scoopex Finland. Finnish coder Slayer was a production machine. The widely spread crack intros, *Seven Sins*, *Mental Hangover*, *Chromium*...the unreleased *World of Wodka* (which was in fact a reference to Ranger's BBS at the time) actually started in 1989 (probably the

Scoopex's Reward looks back

I started working with Slayer when he and I went to the same university, and we drank beer together. We never went into business together, because I think you should never mix business with friends.

We got into Scoopex and formed the Finnish section from calling cards (we started delivering them later on, once we got pages from American phone company catalogs...). We went from nobodies to being elite. Thanks to Ranger for accepting us as the Finnish sector of Scoopex. It was a blind call (in poker terms), but hopefully it paid out okay.

Back in the day, as an artist I looked up to J.O.E. / Scoopex, Terminator / TRSI, RA / Scoopex France, and Seen/Melon Dezign. As for my own graphics, I'm most proud of the still unreleased *gfx*. As for prods, I guess I liked *Mental Hangover* the most, even if it was mostly just logos and fonts and very ugly fill patterns.



busiest year in Amiga history), and with the Slayerpacks continuing alongside the now high-numbered Rangerpacks, this solidly engraved the Scoopex name in the roster of major Amiga groups.

At perhaps the height of the Amiga 500 scene, with the wind in the sails from Scoopex Austria and Scoopex UK, Slayer, Reward, and Uncle Tom had climbed to the pinnacle of the charts of the demoscene.

Photon on joining Scoopex: 'In 1989 I joined Phenomena just after their megademo, and I was very busy and happy. Why did I leave for Scoopex? Well, I think it's about friends and contacts. Friends left for Real Life™, the group got new blood, and I started visiting Firefox, Uncle Tom, Uno and Judas. I still remember the good times I had with the Scoopex and Phenomena members.'

'Uno was a fan of Reward and had made contact with Scoopex Finland, and I was a fan of Slayer – while wanting to beat him to a pulp, naturally, as things were in those days – and late-night phone calls ensued.'

'I was shown a crack intro by Slayer featuring a corkscrew scroller, and knowing my skills I saw an opportunity for one-upmanship! Phenomena, and not least Uno, made sure I lived up to my arrogant promise. I had to deliver that scroller with an impossible bendy bar through it (and increased character height – vital information for any coder), or I would be a lamer and a bullshitter.'

The new effect was done from start to finish in fourteen evenings.

I think my “impossible” scroller pissed Slayer off. No less because I made sure to prevent lamer cartridge look-sees, so that you had to break the exe to see inside.

I had already made friends with Judas, Uncle Tom and Uno, but in my mind this was the clincher that got the okay from HQ to (re-)form Scoopex-Sweden, together with Invid and Redskin in the autumn of 1990.

This was a memorable time in my scene life, and it's a pity that Real Life™ hit me (and many others). From Scoopex Sweden came a single dentro. Albeit influential, it felt like such a stab to the heart that none of us got to realise our dreams, just at the time that we felt we were at the top of our game. For me personally, it felt like the end of the world.'

In 1990, n.o.m.a.d., previously the main cracker, trainer-maker, and compact-maker for Slipstream-UK joined Scoopex and released over thirteen major cracks, plus single files and compacts. n.o.m.a.d. would go on to be one of the biggest names in the Amiga cracking scene for other legendary groups such as Genesis, the Angels-Defjam-Genesis co-op, Angels, Crystal, Quartex, Nemesis, and finally Fairlight before leaving the cracking scene in early 1994.

So perhaps during 1991, the first wave of the Amiga demoscene started petering out. At least I think most of us felt groups were dying. Our main

cracker n.o.m.a.d. left and this probably influenced Ranger's decision to later leave the group when 1993 became 1994. Naturally, Scoopex continued competing, with new talent and competition platforms – enter 40k, AGA, and accelerators. These years might well be considered in some ways to be the true Amiga demoscene period as we'd like to remember it – the Amiga

Scoopex's Uncle Tom looks back

A few party memories which have stuck with me are those times when Photon coded on caffeine pills. He ended up under the table with a nosebleed, and the ambulance came for him. At another party J.O.E. taught me how to draw light-sourced balls when I started painting. At the same party I went to buy sausages to grill in the woods behind the school. I was a little careless putting out the fire and the fire department came and put out a minor forest fire. I'm still not sure if it really was just my doing.



Outside parties, I remember lots of occasions meeting buddies and scene contacts, like doing a shoot 'em up with Photon, planning, coding, and drawing together. Just the ship's explosion were a huge amount of animation frames. Both frustrating and glorious times, then.

Nowadays life has turned around, people have jobs, other interests, and their own lives, and there's hardly time to vacuum the hallway. But I'm certainly not complaining. I have a job I like and colleagues with similar interests, plus above all you get a paycheck. I'll always remember the old times though, it was the first ‘job’ you had, you met people that completed your work and vice versa, and the result was demos, games and other potentially exciting projects.



Austrian coder Antibyte had quite an impact on Scoopex, helping to win for the group The Party! '98 40k intro competition with 1000% (six screens **above**), featuring no less than twelve parts and three soundtracks.

was the champion, and the PC was continually trying to catch up. It adapted and changed, from noisy high school lecture halls to large venues with big screens and big prizes. With voting no less dodgy and competition fiercer, the stakes were raised. Whoever wanted to be the best really had to prove it. For us, even though our pack disks continued into the hundreds, there was a short dip in demoscene prods, except for an entry into the shiny new 40k category earning fourth place at The Party! 2 in 1992.

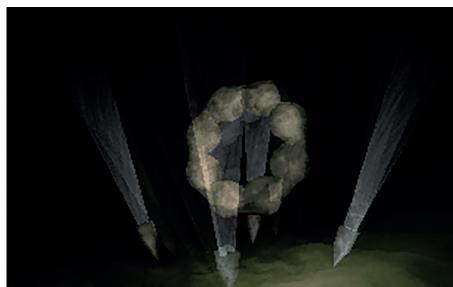
In 1993, Scoopex organised CEBIT'93 in Germany – together with and sponsored by none other than Commodore. But there were quite a few party co-ops which had already started in 1989 with Share and Enjoy and

continued until 1998 with the Motorola Inside party, perhaps appropriately enough, in Finland.

Antibyte had been with Scoopex since the early days and had released crack intros for us, but the end of 1993 saw his ocs trackmo, *Pha-Q*. It was competitive and polished, perhaps a sign of things to come? In his words: 'In 1993–98, we abandoned the cracking scene and became a demogroup only. In that period we also reached the top of the charts again, carrying on Ranger's legacy. I want to emphasise that Mental Hangover revolutionised the demoscene across all platforms, as it was the first continuous real-time presentation without discernible interruptions. Up to that point, people did megademos. After *Mental Hangover*,

Four below: *Blu Sky* (2015): First 1px fullscreen sine.





these were a thing of the past as everybody adopted the trackmo.'

Indeed, Antibyte continued on AGA. With Made and Virgill to name a few, he showcased effects and not least his honed 3D engine, bringing first place wins to Scoopex with titles such as *Alien 2*, *Superautodrome 1* and *2*, and *1000%*.

Even Antibyte's non-competitive releases solidified Scoopex's reputation as we had great success in the diskmag charts; from April 1998 through to September 2000, Scoopex held the No1 place for Best Group, a staggering achievement.

This was the time when the French section bloomed, and also collaborations, both for demos and diskmags. Scoopex had been doing World Charts in co-op,

and teamed up with Seenpoint, one of the most respected diskmags at the time.

The Amigascene side of things hit a slump from 2000 on as the PC finally became decent.

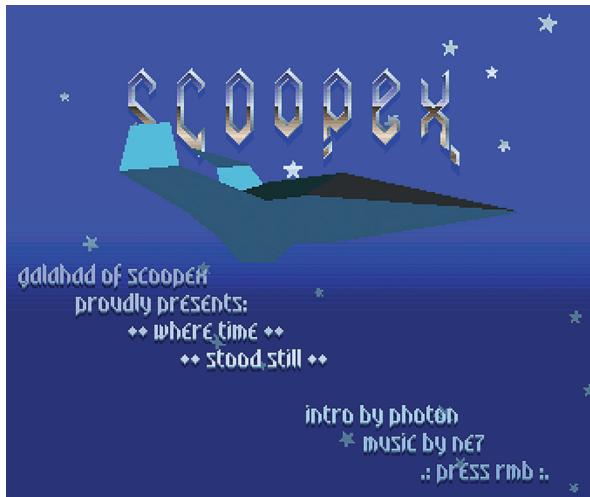
It is accurate to describe the Scoopex narrative as largely an Amiga story. Even though we have certainly released on other platforms, it cannot be said that Scoopex moved over to PC. (In fact, very few groups did; new sceners and some old sceners did, but mostly in new groups and new collaborations.) But those who have paid attention have seen several releases each year, many of which have competed very well, with ten competition winners!

The consecutive wins in the same compo achievement would be repeated



Above: SIR was invited by Fishwave and Noogman, **below**, to organise Scoopex until 2009.





Above: a first for large, full-framerate inconvex vectors – the Scoopex intro to the Amiga conversion of *Where Time Stood Still* (2014).
Right above: Grade My Waterbear (2016) – first ocs 4x4 true colour chunky rotzoomer.

in the 64k compo at Breakpoint in 2004/2005, and in the Bootblock compo at Datastorm in 2013/2014.

Starting in 2006, there was a reformation of Scoopex with new management. The new organiser, SIR, got people going again, with an internal newsletter and a new website. A couple of years later, he had to leave and appointed Photon organiser.

Since 2014, or perhaps starting as early as 2011, the ocs Amiga scene in particular has seen a general rise in productions, as the people who left for Real Life™ have rediscovered their interests, reacquired the machine of their youth, tricked it out with brand new

Up to their old habits again...crack intros, **right:** from 2016 *The Great Giana Sisters Special Edition* for Reimagine Games; 2014 *Eliminator* by Stingray (logo by Butch); **opposite top:** 1990 a cracktro by Slayer made for *Colorado* by Silmarils.



expansions and modern interfaces, and started getting creative again.

No less so for Scoopex, and this has resulted in more releases, including some adding to our ocs firsts. And not only that: with active and dedicated crackers Stingray and Galahad in the group (and released and unreleased Amiga game titles being unearthed and polished), we are up to our old habits again.

We are both part of and witnessing this revival, where the Amiga scene is rivalling the C64 scene, something that was not true half a decade ago. At Breakpoint (now called Revision), there has been a constant Scoopex presence for over a decade, with the yearly tradition



of an outside barbecue-party (Fleisch!).

We continue releasing Amiga demoscene productions and cracks thanks to our members – for the current member list, see scoopex1988.org, and don't hesitate to contact us for co-op productions and joining.

At any one time, Scoopex had just twenty to forty members. But over the years, hundreds and hundreds of members have joined and left Scoopex who have contributed to our reputation – and we have had over five hundred releases so far. You must understand my



appreciation, and that it's absolutely impossible to mention all the members and releases that have made the Scoopex Amiga history so illustrious! 🎉

Compiled with the help of past & present Scoopex members
Written by Henrik Erlandsson (Photon of Scoopex)

Scoopex at Breakpoint
2009, left to right:
Noogman, SIR,
Fishwave, and Photon.





Martyn Carroll

The AGA hardware boosted the graphics performance of the Amiga 1200 and 4000 models, but how much impact did this have on games? Martyn packs away his trusty old Amiga 500 in a bid to find out whether AGA did make a difference, or if it was a case of too little too late.

Under Commodore there were three different Amiga chipsets. The first was ocs (Original Chip Set) and the mere mention of it demands that we should all be upstanding, for it is thanks to this phenomenal design that the Amiga was able to deliver fantastic visuals and sound and become a powerful gaming platform. Indeed, the very reason you're reading this book right now is because of ocs and

“...the future of Amiga gaming suddenly looked very bright. Luminous even.”

the amazing software it brought to life. So praise be to Agnus, Denise and Paula, and the creators of these custom chips. You may now be seated.

The revered ocs formed the guts of all Amiga models up until the release of the Amiga 3000 in 1990, at which point it was superseded by ecs (Enhanced Chip Set). ecs was backwards compatible with ocs and proved to be a slight upgrade, introducing additional high-res graphics modes that were intended for application software rather than games. As such no

commercial games of note were designed specifically for ecs, even though the chipset did replace ocs in the ‘consumer’ models – the A500+ and A600, as well as some of the last A500s to be manufactured.

ECS was soon replaced in 1992 by AGA (Advanced Graphics Architecture), a new chipset that debuted in the high-end A4000 and mass-market A1200 models. This was a more significant upgrade, particularly when it came to graphics for games. Whereas ocs and ecs could typically display 32 colours from a palette of 4096, AGA upped this to 256 colours from more than 16 million. Smoother scrolling and wider hardware sprites were also introduced, among other enhancements, and the future of Amiga gaming suddenly looked very bright. Luminous even.

Visuals aside, the A1200 hardware also benefitted gaming in two key ways. A 68EC020 CPU was used which was a 32-bit design as opposed to 16-bit, and ran at twice the speed of the 68000 found in earlier models. Furthermore, the A1200 came with 2MB of main

memory (Chip RAM) as standard, providing more space for graphics, sound and game data. ECS could address up to 2MB of Chip RAM, yet the stock low-end models came with 1MB of memory (or less) so there was little point in designing games to take advantage of the extra memory. But now developers could use the full 2MB without worrying about owners of unexpanded machines being left out.

The presence of the faster CPU gave some existing 3D titles a speed boost, with *Stunt Car Racer* and *Formula One Grand Prix* being two notable examples. The extra memory was also utilised by several games to reduce disk-loading times. But let's be honest, anyone who owned a new AGA Amiga was much more interested in the new wave of titles that would exploit the advanced chipset.

The suspense was palpable, especially as key developers like Ocean, Gremlin, MicroProse and Team 17 promised to support the format. Commodore itself claimed that there would be between fifteen and twenty AGA titles available by Christmas 1992.

Unfortunately that proved to be the hollowest of boasts. In fact, by April 1993 the total number of AGA games released was precisely four. And they were not AGA exclusives but rather enhanced versions of older OCS titles. First up was an update of Gremlin's platformer *Zool* which was billed on the box as the 'Super Enhanced Amiga 1200 Version'. This sounded promising,



except that the main change was the introduction of overblown backgrounds that resembled wallpaper in a kid's nursery. To make matters worse the extra background detail had a negative impact on the frame-rate, resulting in the game actually playing slightly worse than the original.

Ocean's AGA update of *Sleepwalker* provided more subtle enhancements. So subtle in fact that you'd struggle to spot the difference unless you played them

Spot the difference – the AGA version of *Zool* by Gremlin Graphics, **above**, and the standard version of the game **below**. The standard version played quicker.



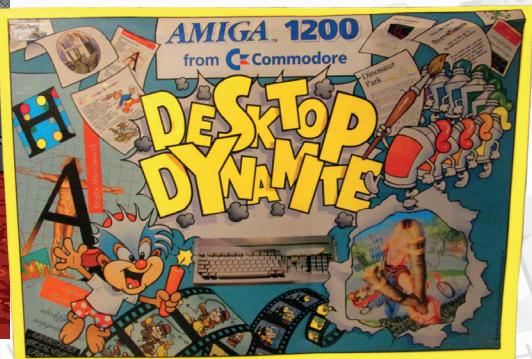


With enhancements so subtle as to be hard to spot, Ocean's *Sleepwalker* in AGA, top, and the standard version below it.

side-by-side. There was some extra detail in the backgrounds (like little lights in the buildings on the city skyline) and the sprite shading was a touch smoother, but that was basically it – apart from during the opening cutscene where the bedroom walls and floor were different colours! This actually serves as a good analogy for the whole ‘update’ situation, as developers would generally take existing properties and simply splash some new paint around.

This was certainly true of the next two AGA updates: *Trolls* and *Nigel Mansell's World Championship* (although it must be said that Mansell's moustache looked resplendent in AGA). The James

Pond sequel *Robocod* was the next title to be trotted out and tarted up, some eighteen months after it originally debuted, and once again some new, colourful backgrounds were added. However, Millennium wisely added five brand new levels. It was a small addition but a welcome one in the eyes of A1200 owners who were desperately seeking something – anything – that was exclusive to AGA, even if it was just an extra helping of fish supper.



AGA allows more enemies

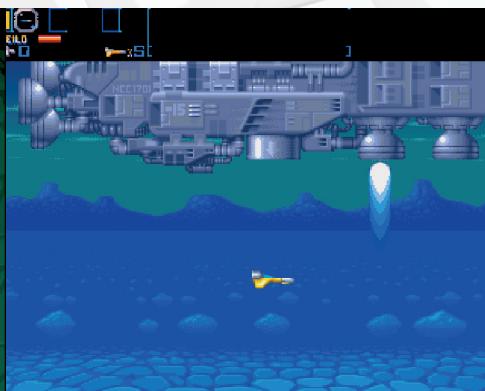
Commodore itself did nothing to showcase the gaming potential of the A1200. The popular *Desktop Dynamite* bundle, released in October 1993, included some strong application software but the two games featured – *Dennis* and *Oscar* – were virtually identical to the existing ocs releases. *Dennis* in particular was a dire platformer with barely perceptible AGA enhancements. Thankfully, the very same month saw the release of the first game that was designed exclusively for the AGA hardware. *Overkill* from Mindscape was a frantic *Defender*-inspired shooter



that would only run on AGA. This was a significant release. Not only was it a great game but it's difficult to imagine it running with the same level of smoothness and speed on an OCS Amiga. A precedent was set, yet it would be

hardware. That certainly sat well with the firm's demoscene roots, yet it was also in the business of making money so it would have been reckless not to release an OCS version too. The solution was to release the AGA version first and follow

James Pond with OCS standard background, left, and on the right the jazzed up AGA version.



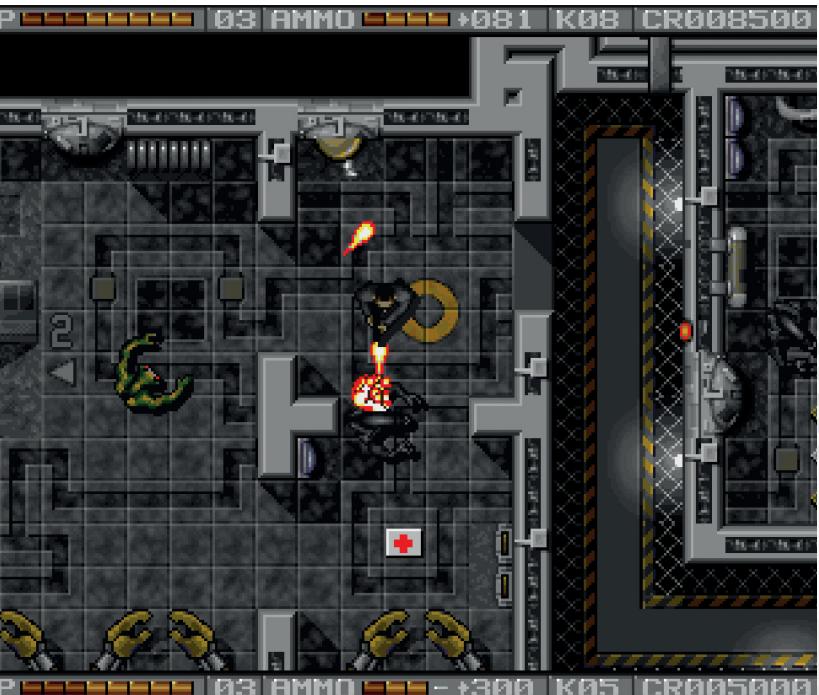
Mindscape's *Overkill* would only work with AGA-equipped Amigas.

a long while before other publishers followed.

All eyes shifted to Team 17 who were busy preparing the highly-anticipated *Alien Breed II* for Christmas 1993. The developer was renowned for pushing the Amiga hardware, so it was no surprise when it announced that the *Alien Breed* sequel would be developed for AGA

this up with a less sumptuous release for the far larger OCS user base.

However, the game's development diary was published in *The One* magazine where the programmers revealed that it was more practical to develop the graphics for the OCS version first and then retouch them for AGA. This lowest-common-denominator approach also



Alien Breed II: The Horror Continues – OCS graphics retouched for the AGA version.



Right, top to bottom:
Danny fights Junior in Team 17's *Body Blows Galactic*; mosquito attack in *Jurassic Park*; use the fire extinguisher, *Simon the Sorcerer*.

meant that some of the more ambitious design ideas, such as a proposed visual trick where the game would zoom out to show huge alien bosses dwarfing tiny player characters, were evidently dropped.

Ultimately the only key difference between the two versions was that the AGA release allowed more enemies to be displayed on screen (which actually served to make the game overly difficult). Interestingly, the Team 17 guys also revealed in their diary that obtaining detailed AGA technical information from Commodore was far from straightforward, which might explain the lack of widespread support.

Alien Breed II was the first of several high-profile titles that led with an AGA version before being followed by an ever-so-slightly scaled-down OCS release.

These included Team 17's own *Body Blows Galactic*, Ocean's *Jurassic Park* and Adventure Soft's *Simon the Sorcerer*. Meanwhile the process continued to



operate in reverse with existing titles like *The Chaos Engine*, *Soccer Kid* and *Zool 2* being updated with minimal justification for their existence beyond some extra colours and graphical detail. *Heimdall 2* followed suit, but noticeably the enhanced AGA release came on seven disks compared to the OCS version's



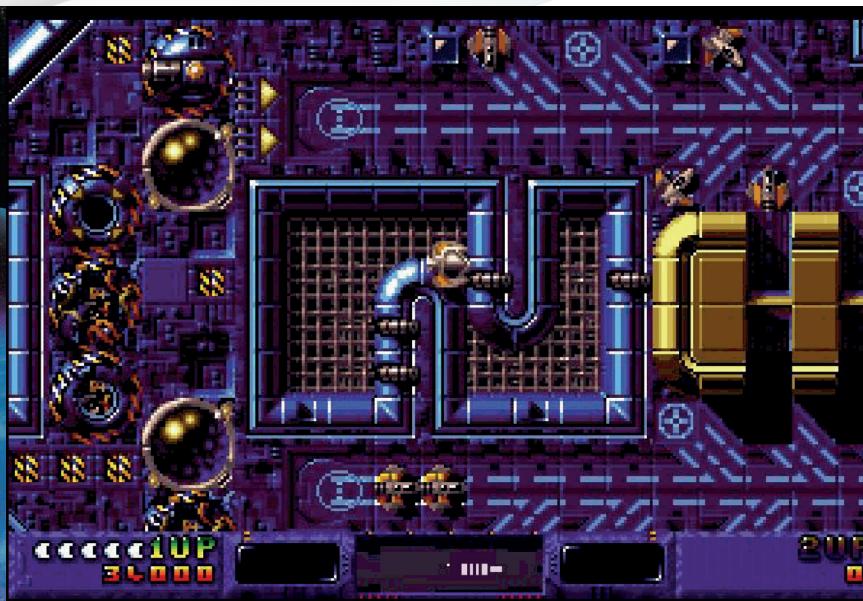
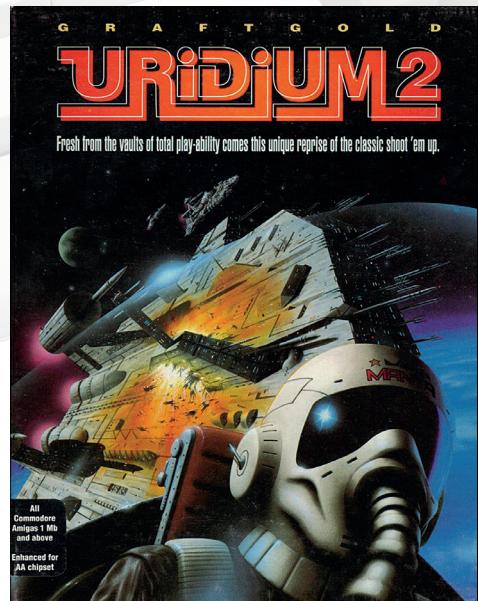
four. Maybe this was another reason why many developers eschewed AGA, as adventure games like *Monkey Island 2* and *Legend of Kyrandia* already came on a ridiculous number of floppies and full AGA support would have only added to the number.

As there was often very little difference between the AGA and ocs versions some publishers wisely opted to bundle them together in a single release. The first title of note to do this was Graftgold's *Uridium 2* which would determine which hardware was

available and then load the appropriate version. In the case of *Uridium 2*, if AGA was detected then more sprites, effects and graphical detail would be displayed on-screen, and an extra-manic 'Mayhem Mode' was available. This 'hybrid' approach was adopted by a number of titles including *Skidmarks*, *Liberation: Captive II* and the third Alien Breed game *Tower Assault*. Not only did this reduce production costs for publishers but it was helpful for owners of older Amigas who were thinking about upgrading as they could purchase one

Spot the difference:
Chaos Engine standard
ocs on the left and
the enhanced Chaos
Engine AGA on the right.

Andrew Braybrook's C64 hit game *Uridium* was transformed thanks to the Amiga's improved graphics, even more so with AGA. Graftgold's *Uridium 2* offered five different game modes and AGA enhancements, including the Mayhem Mode.

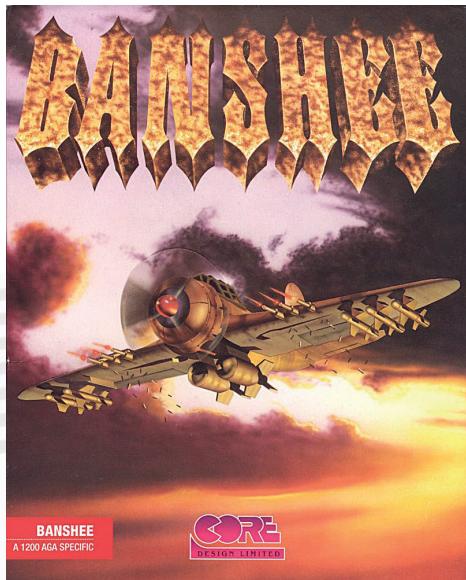




Above: *Banshee*, an AGA exclusive, old-school vertically scrolling shoot 'em up and *Asteroids*-plus in *Super Stardust* below.

of these titles and then benefit from the enhancements (however small) when they finally acquired an A1200.

Those that did own an A1200 were finally rewarded in late 1994 when a number of top-quality and technically-



(the opening stage took more than twelve minutes to finish). This was only achievable by filling the full 2MB RAM.

Banshee was followed by *Super Stardust*, the AGA-exclusive sequel to Bloodhouse's original *Asteroids* update. As with its predecessor it was the 3D tunnel sections that truly impressed and these were more mesmerising than ever on AGA hardware. Similarly,

computerised pinball never looked better than in *Pinball Illusions*, the third (and first AGA-only) entry in Digital Illusions' much-loved series of simulators. *Aladdin* was another AGA exclusive that boasted gorgeous cartoon visuals that matched those in the

celebrated Mega Drive version.

Theme Park and

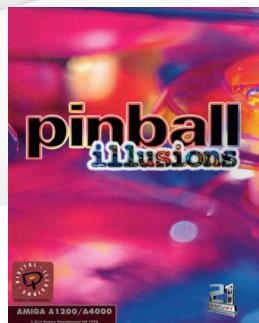
UFO: Enemy Unknown

should also be

mentioned here,



excellent AGA exclusives arrived. The first was Core's *Banshee*, a co-op vertical shooter that played like a hyperactive version of *1942*. The game looked great but it's best remembered for its varied and outrageously long levels



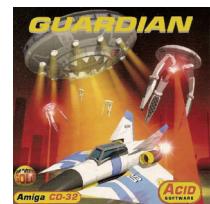


because although they later received separate OCS releases they were clearly hamstrung compared to the AGA originals.

In 1995 the A1200 received ports of *Guardian* and *Roadkill*, two very good games that had originally debuted on the Amiga CD32, Commodore's AGA-powered, CD-based console. CD32 owners had been inundated with A1200 ports (typically with an animated intro and CD soundtrack slapped on), so it was novel – and not unwelcome – to see the process happening the other



way round. However, 1995 was without doubt the year of the *Doom* clone in the Amiga gaming world and several titles vied for attention including *Gloom*, *Fears*, *Breathless* and *Alien Breed 3D*. All of these attempts were AGA-only, naturally, but it quickly transpired that an unexpanded A1200 wasn't really up to the job. If you wanted to glide down richly-detailed 3D corridors then you



Roadkill, left, and *Guardian*, box art above, started life on the Amiga CD32 as AGA-enhanced games before being ported across to the A1200.

"If you wanted to glide down richly-detailed 3D corridors then you needed more memory..."

needed more memory and ideally an accelerator card too for a CPU speed boost. And back then upgrading an Amiga was expensive and not something the majority of casual users would be inclined to do.

This trend continued in 1996, with two very good 3D games – the fun racer *XTreme Racing* and the ambitious *Alien Breed 3D 2* – requiring Amigas with plenty of grunt to play as the developers intended them. It wasn't all about 3D though, as in the same year came the arrival of two top-drawer 2D titles. The first was *Slam Tilt*, another pinball title and quite possibly the best

Left: vigorous AGA cartoon animations in *Aladdin*.

Below, left to right: Doom-merchants *Gloom*, *Fears*, *Breathless* and *Alien Breed 3D*.



Above: *Slam Tilt AGA* and below *Worms: The Director's Cut*.

game of its type. Finally, 1996 ended with the release of *Worms: The Director's Cut*, a super-enhanced version of the original hit which was almost like Team 17's love letter to the Amiga faithful.

However, the firm has since revealed



that its affection wasn't exactly reciprocated as the game only sold a miserable 4,000 copies. It appeared that over time the Amiga gaming market had shrunk to almost nothing.

It's not known exactly how many Amiga 1200s were sold worldwide, but it's clear that the introduction of AGA did little to reverse declining hardware sales – a trend that led to Commodore's collapse in April 1994. It's very easy to get bogged down in 'what ifs', questioning whether Commodore made the right hardware decisions and whether a more radical upgrade would have attracted wider software support. Would the introduction of the long-gestating, next-gen AAA (Amiga Advanced Architecture) chipset in place of AGA have changed the course of Amiga history? Perhaps, but regardless, this book is about celebrating the very best Amiga games and that unquestionably includes some of the titles outlined above that were AGA exclusive, or at least AGA-enhanced to a significant degree.

It's a small selection of games, probably a dozen at most, but they're important nonetheless – and if you worshipped at the altar of ocs then you owe it to yourself to seek them out.





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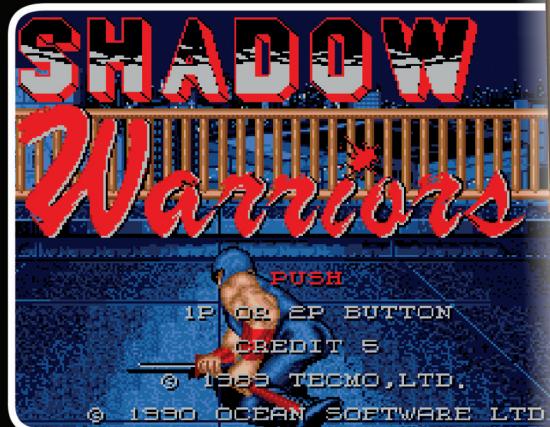
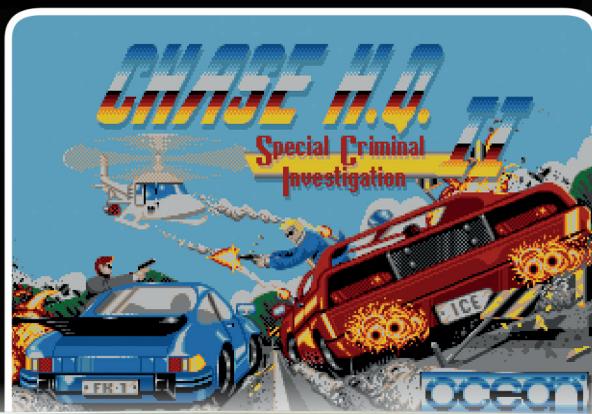
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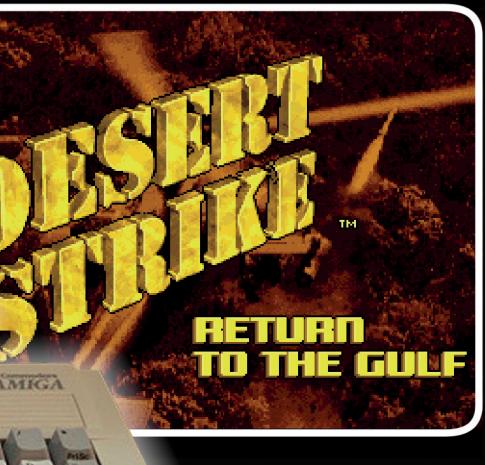
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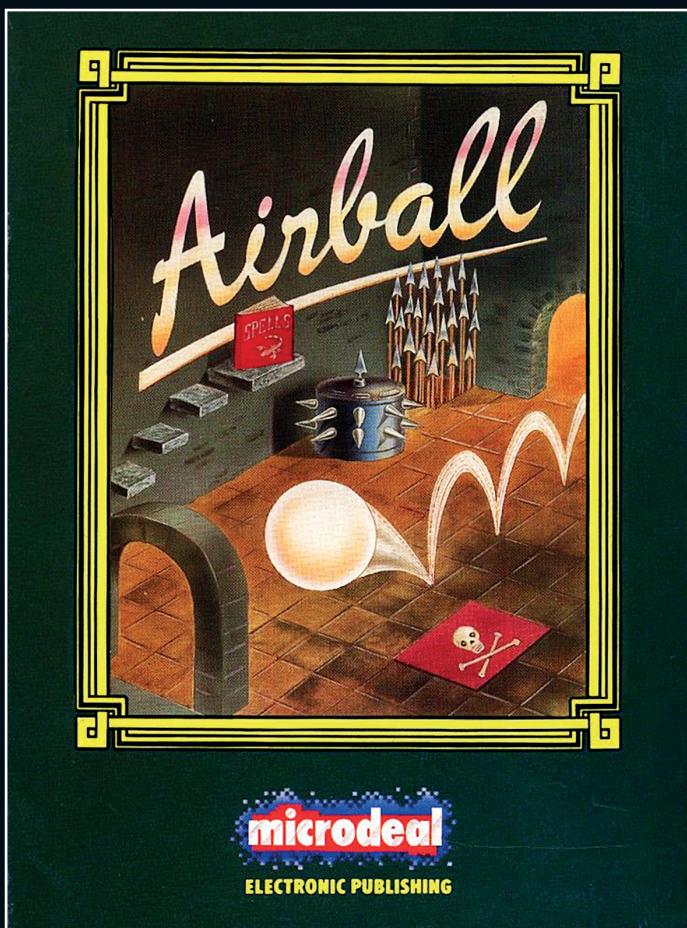


Jax



Games writer and regular contributor to *Retro Gamer* magazine among many other publications, Kieren Hawken – aka **The Laird**, reflects on a bunch of the greatest and most popular Amiga games of all time.

Name : Airball
Year : 1987
Publisher : MicroDeal



Originally released for the long-forgotten Dragon 32 computer in 1987, Airball would have to wait two years to really make its name when it was reworked for the 16-bit generation. At heart the game is an isometric arcade adventure, a genre much lauded on 8-bit computers but largely forgotten with the next generation.

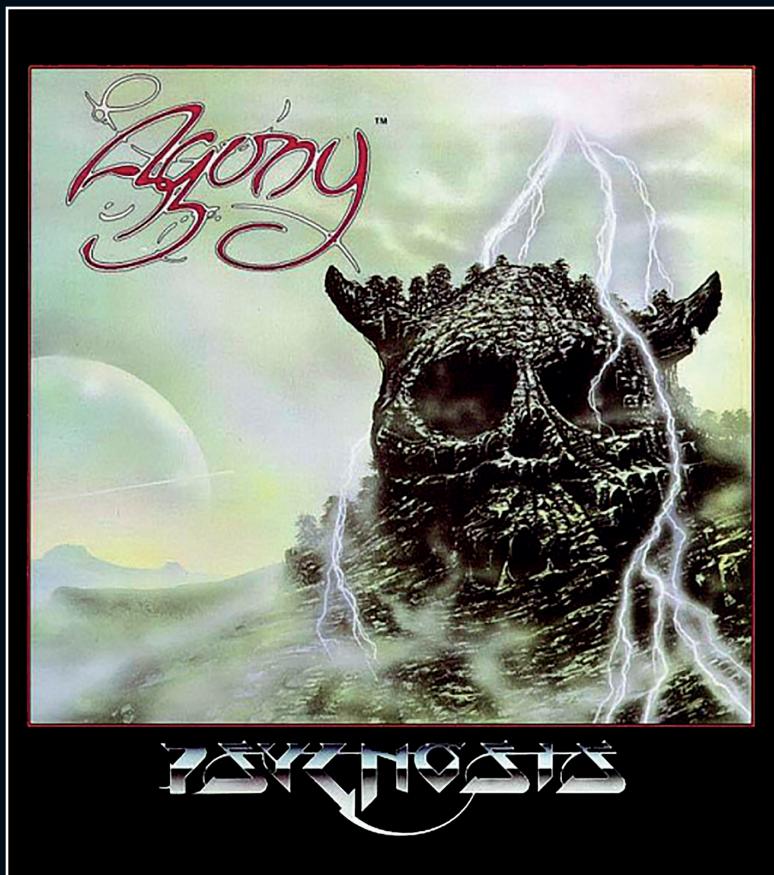
What makes Airball especially interesting when compared to similar games is the use of air itself. To complete the game the player must keep the air

in the ball topped up via inflating stations. But use them too much and the ball bursts! So it's all about keeping it balanced.

The plot of the game revolves around you being turned into the titular Airball by an evil wizard and the only way to return to human form is by finding the items needed to break the spell. Of course there are lots of hazards out there for a fragile ball of air! Airball is a beautifully designed adventure that slipped under the radar for many.



Name : Agony
Year : 1992
Publisher : Psygnosis / Art & Magic

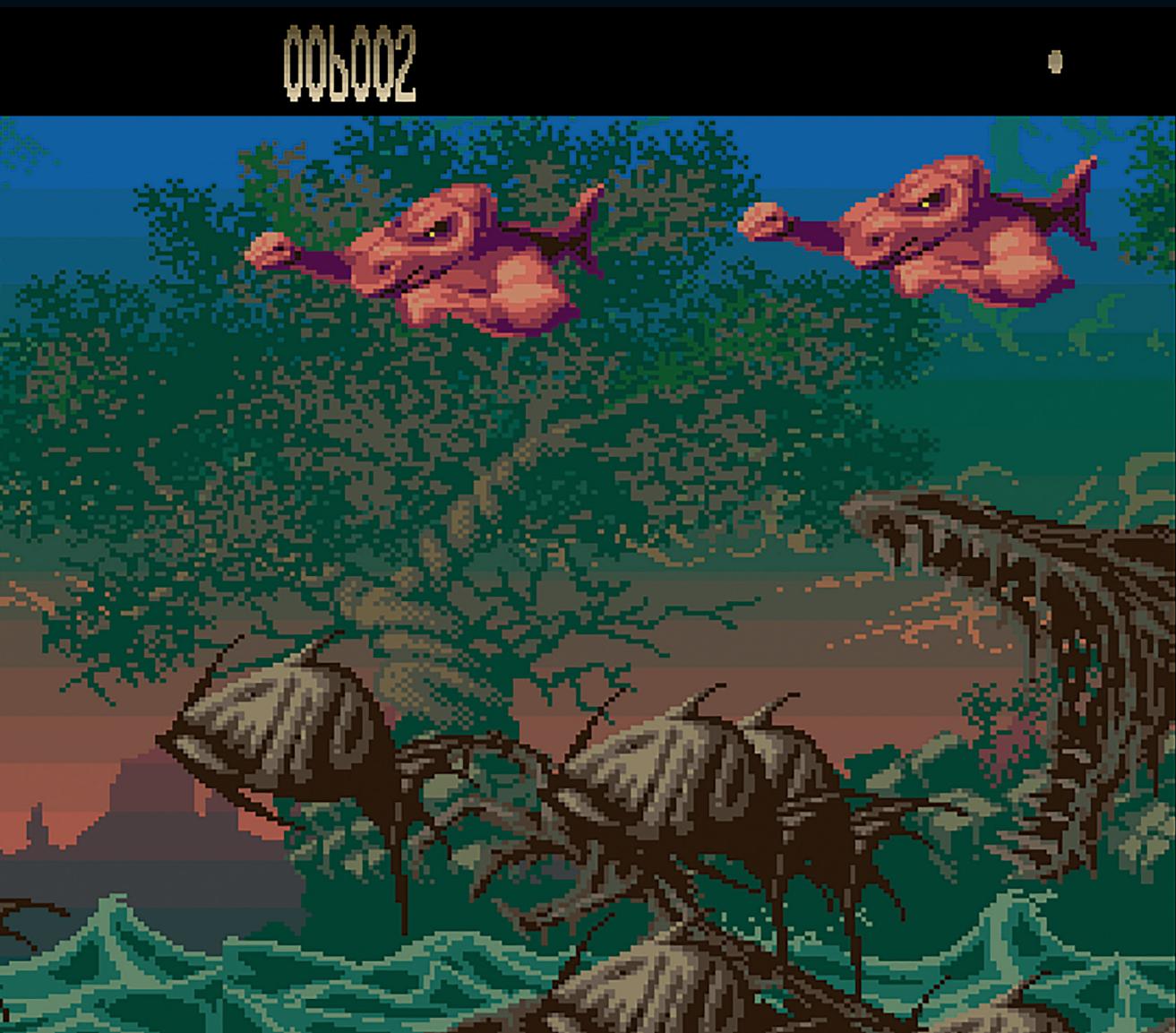


This graphical tour-de-force from Psygnosis is extremely interesting in that the main character in the game is actually the company's own mascot! This was the first and only time that the Psygnosis owl would take on this role, but in this horizontal shoot 'em up he found his perfect home.

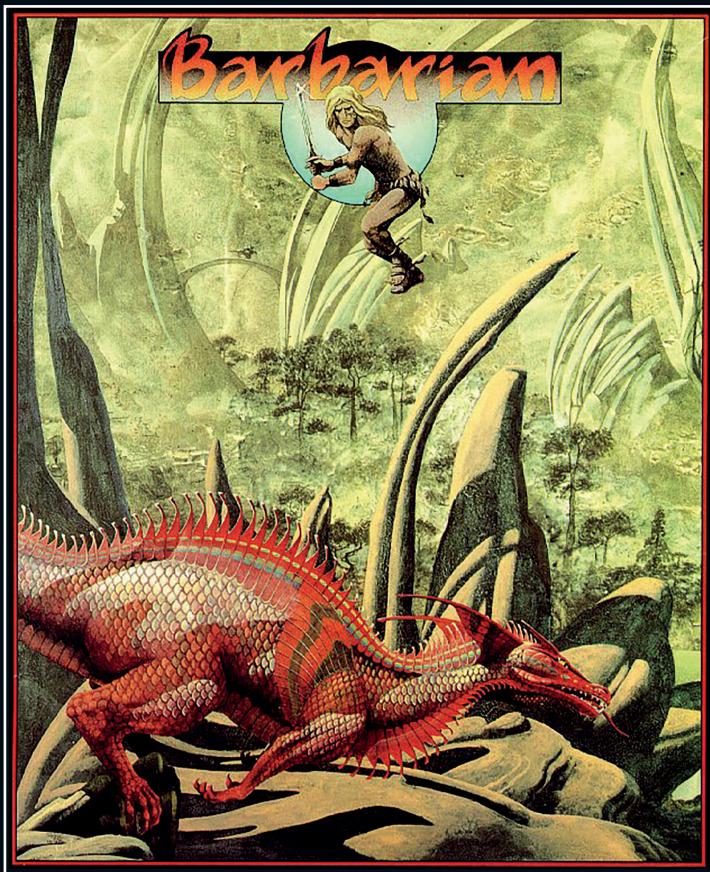
Agony looks beautiful (graphics by Franck Sauer and Marc Albinet) and takes full advantage not only of the hardware on offer but also the in-game character. This is because the owl possesses

echo-location, just as a real night prowler would, and this acts as your weapon. You must guide the owl through all six of the stunning fantasy-themed worlds defeating the enemies, collecting the power-ups and ultimately gaining back a human form.

As impressive as the visuals are in *Agony*, we must also give a mention to the wonderful soundtrack, which is provided by both Tim 'Cold Storage' Wright and Jeroen Tel. *Agony* is not just a great game, it's a title to make rival 16-biters swoon.



Name : Barbarian
Year : 1987
Publisher : Psygnosis



Not to be confused with Palace Software's much more famous one-on-one fighter of the same name, *Barbarian* by Psygnosis is a sprawling arcade-adventure with a rather unique control system.

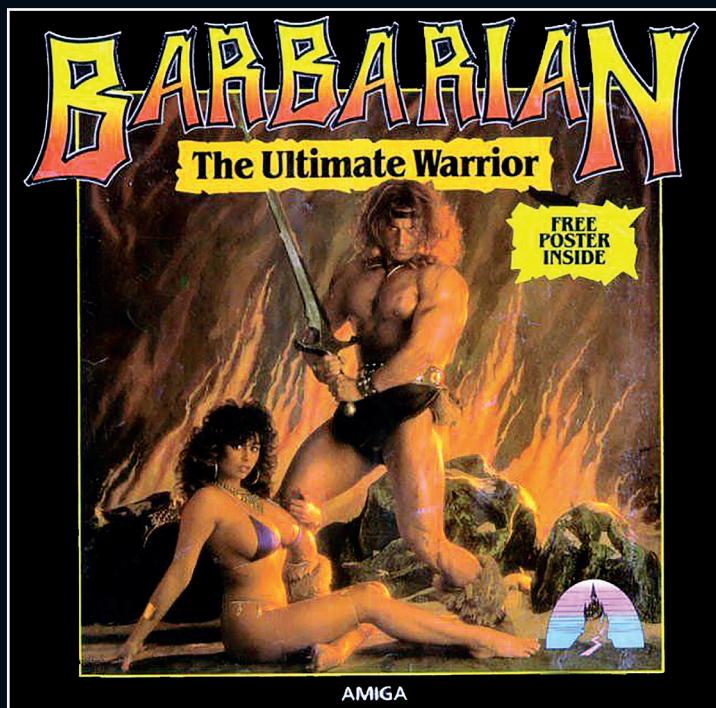
Oddly designed to be controlled with the Amiga two-button mouse, the whole game operates via a simple on-screen menu system. One press of the button activates a panel at the bottom of the screen where each action is selected. Excluding direction movement, there are six different actions that

include attacking as well as defensive manoeuvres. Now this may sound quite fiddly and awkward, but once accustomed to it, the system almost becomes second nature and works rather well.

I guess you could describe *Barbarian* as a thinking man's hack 'n slash. *Barbarian* spawned an equally adept sequel, as well as two spin-off games in *Ork* and *Leander* that all form part of a loosely themed arcade-style fantasy adventure series from Psygnosis.



Name : Barbarian: The Ultimate Warrior
Year : 1987
Publisher : Palace Software



When talking about controversial video games over the years, *Barbarian: The Ultimate Warrior* (marketed by Epyx in the US under the title *Death Sword*) is not only one of the earliest games to earn the monicker but also the most notable.

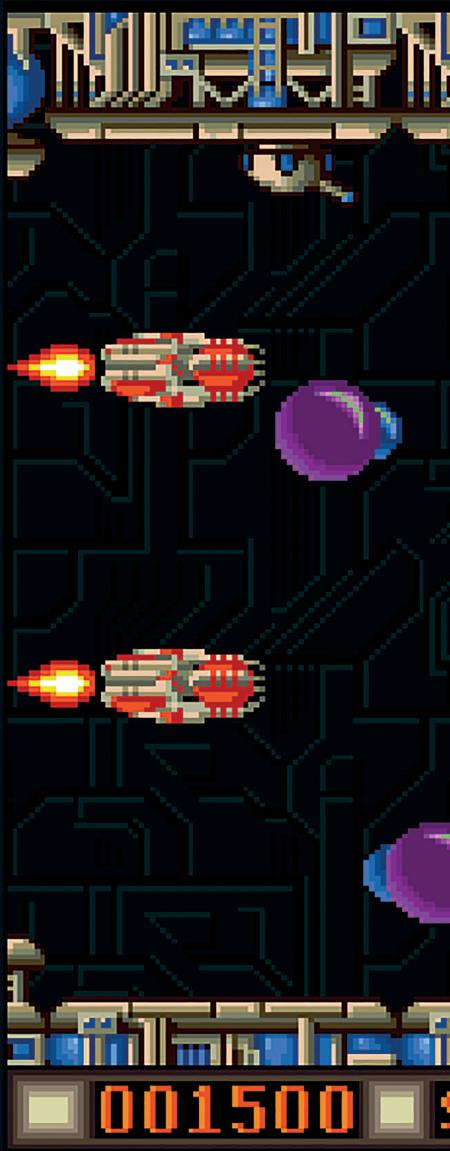
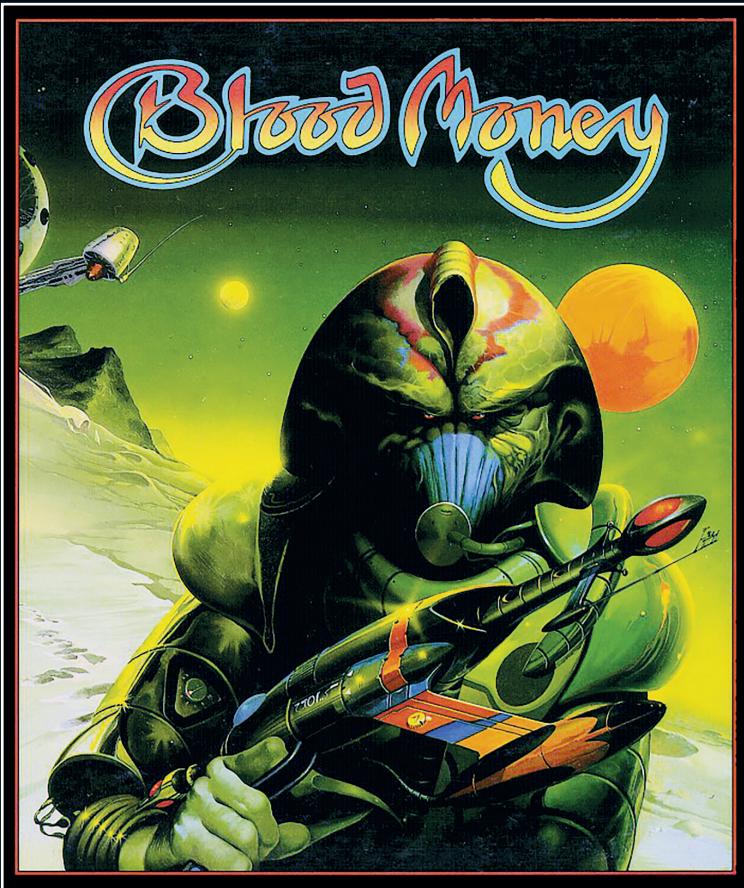
This one-on-one fighter first caused an outcry (more from parents than players) over its extreme level of violence which includes being able to chop somebody's head clean off with a sword. Worse still for some were the cover art and adverts featuring Page Three girl Maria Whittaker in a very scantily

clad state. This led many publications to censor the image and even refuse to take advertising for the game. Horny, bloodthirsty schoolboys everywhere clamoured to get their hands on the finished product.

Fortunately there is a lot more to *Barbarian* than sex and gore as the game itself actually turns out to be pretty good too. The player takes the role of the eponymous barbarian and faces eight other muscular weapon-wielding foes in order to rescue Princess Mariana from the clutches of the evil wizard Drax.



Name : Blood Money
Year : 1989
Publisher : Psygnosis / DMA Design

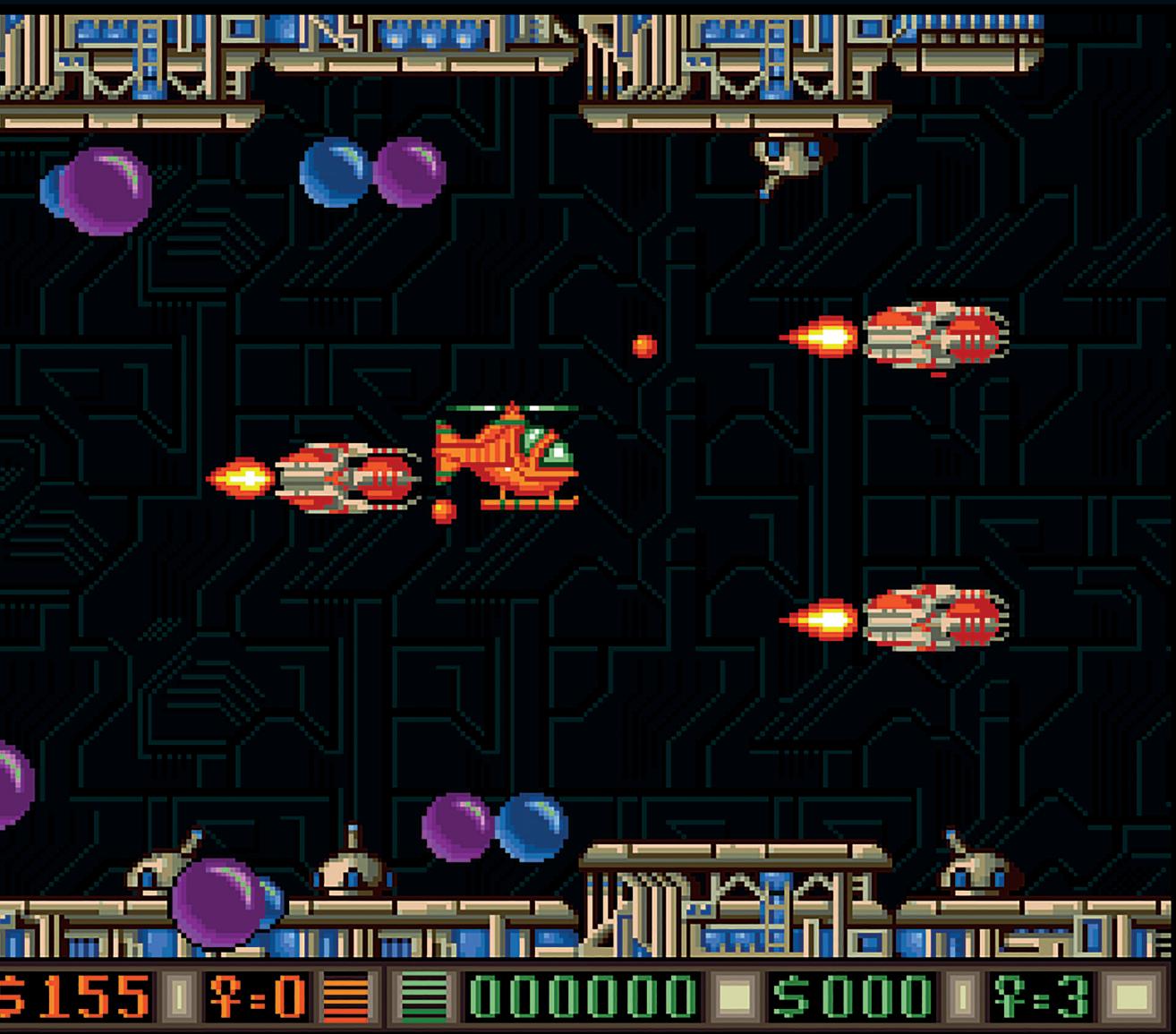


Psygnosis was undoubtedly one of the most prestigious publishers of the Amiga years and DMA Design rank right up there among the most proficient developers. But despite being one of their best selling games, *Blood Money* is not a title you hear discussed nearly enough.

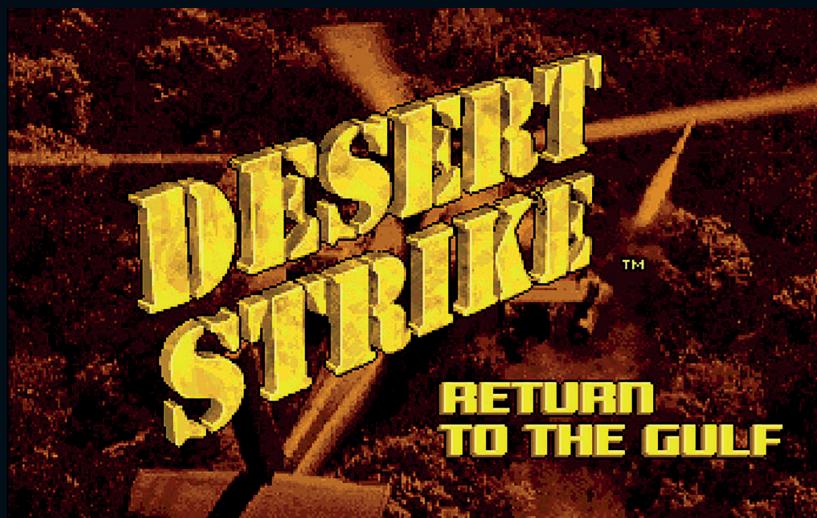
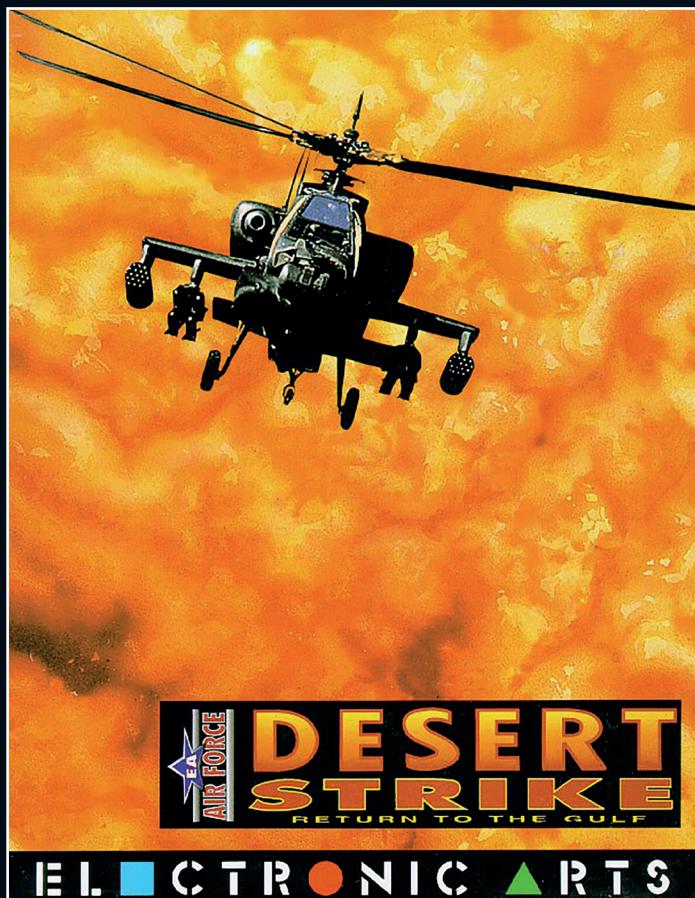
Inspired by the Irem arcade game *Mr. Heli*, *Blood Money* is a horizontally scrolling shoot-em-up that just oozes class from every orifice. The game's most important aspect is its power-up system. Every

enemy destroyed drops coins and it's essential to collect them before they fall off the screen. These may then be spent in one of the shops that pop up throughout each level. And it's important to upgrade weapons substantially as progress is made because later levels get extremely tough.

As good looking as *Blood Money* is, it's Ray Norrish's outstanding soundtrack that really steals the show; this is a soundtrack you will be listening to long after you've finished playing the game.



Name : Desert Strike
Year : 1993
Publisher : Electronic Arts



Originally released on the Sega Mega Drive in 1992, *Desert Strike* shot straight to the top of the charts and quickly became EA's best selling game ever. Although the game follows a fictional story about a Middle East dictator at war with America, the timing of the release couldn't have been better as it followed hot on the heels of the Gulf War's conclusion and the allied victory over Saddam Hussein.

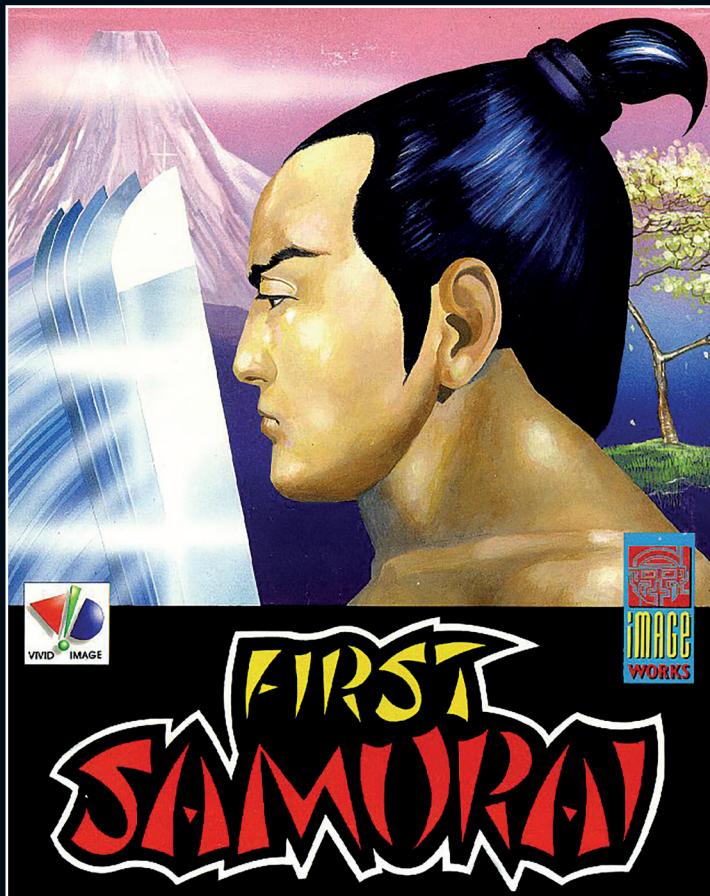
In *Desert Strike* the player controls an American

Apache helicopter flying into the warzone to take out designated targets and rescue hostages. There are various crates littered around the desert to find containing extra ammo, fuel and armour which are essential for completing the mission. One of the game's most important aspects is lowering the winch to collect the crates and rescue your comrades without getting shot down.

This Amiga port, which came out a year after the Sega version, actually improves on the original.



Name : First Samurai
Year : 1991
Publisher : Image Works / Vivid Image

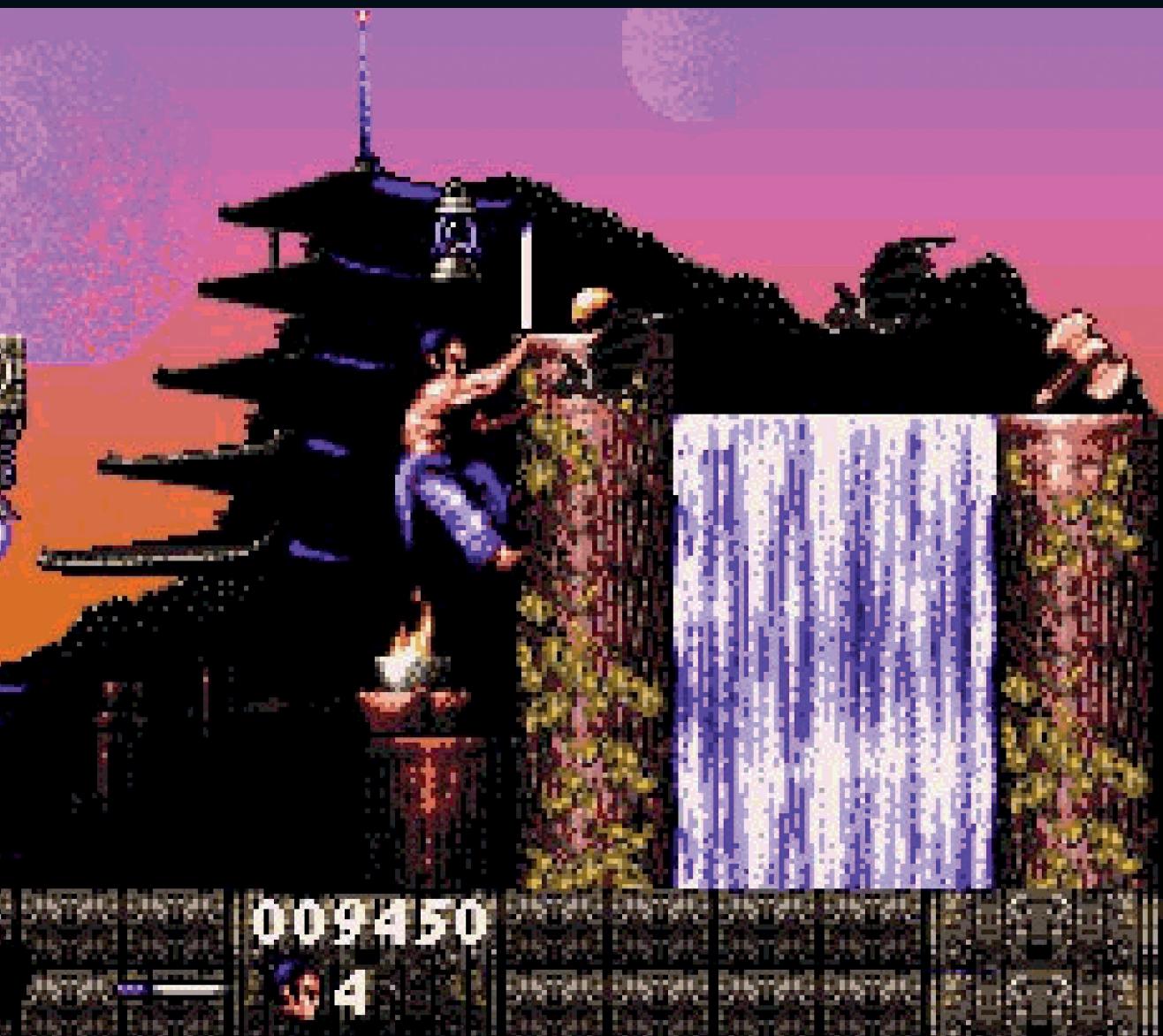


This is a beautiful platform game with both adventure and fighting elements, in which you take the role of the very first samurai on a quest to rid the world of evil.

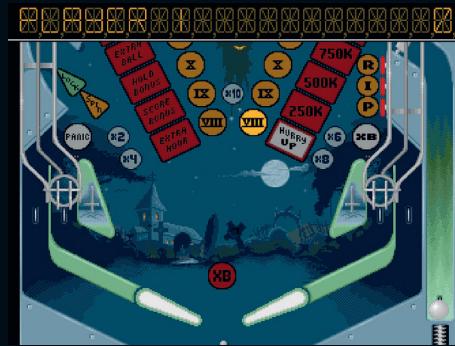
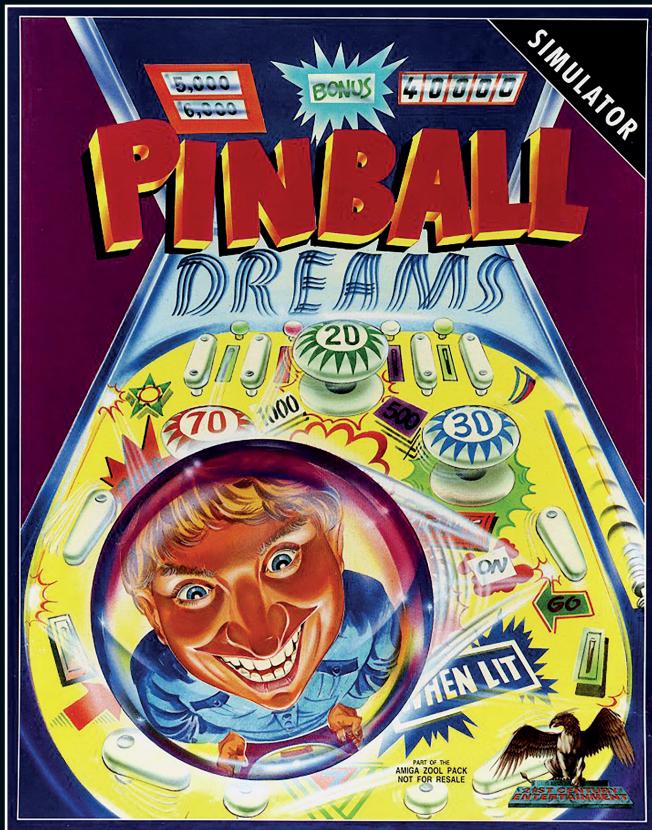
Set in ancient Japan, *First Samurai* offers a wide range of weapons, special items and other objects which can be used to help complete the quest. In every sense of the word *First Samurai* is an atmospheric game. The stunning landscapes and beautifully animated sprites set the scene perfectly

while a huge range of effects and digitised speech samples elevate the play even further. It isn't all about the look though – the action is relentless, there is always something that needs doing and it isn't a game to bore anyone quickly.

In spite of its short time on sale, *First Samurai* was a huge hit on its release. It soared to the top of the charts and received rave reviews from the gaming press, most notably when it appeared on the *GamesMaster TV* show, earning a score of 90%.



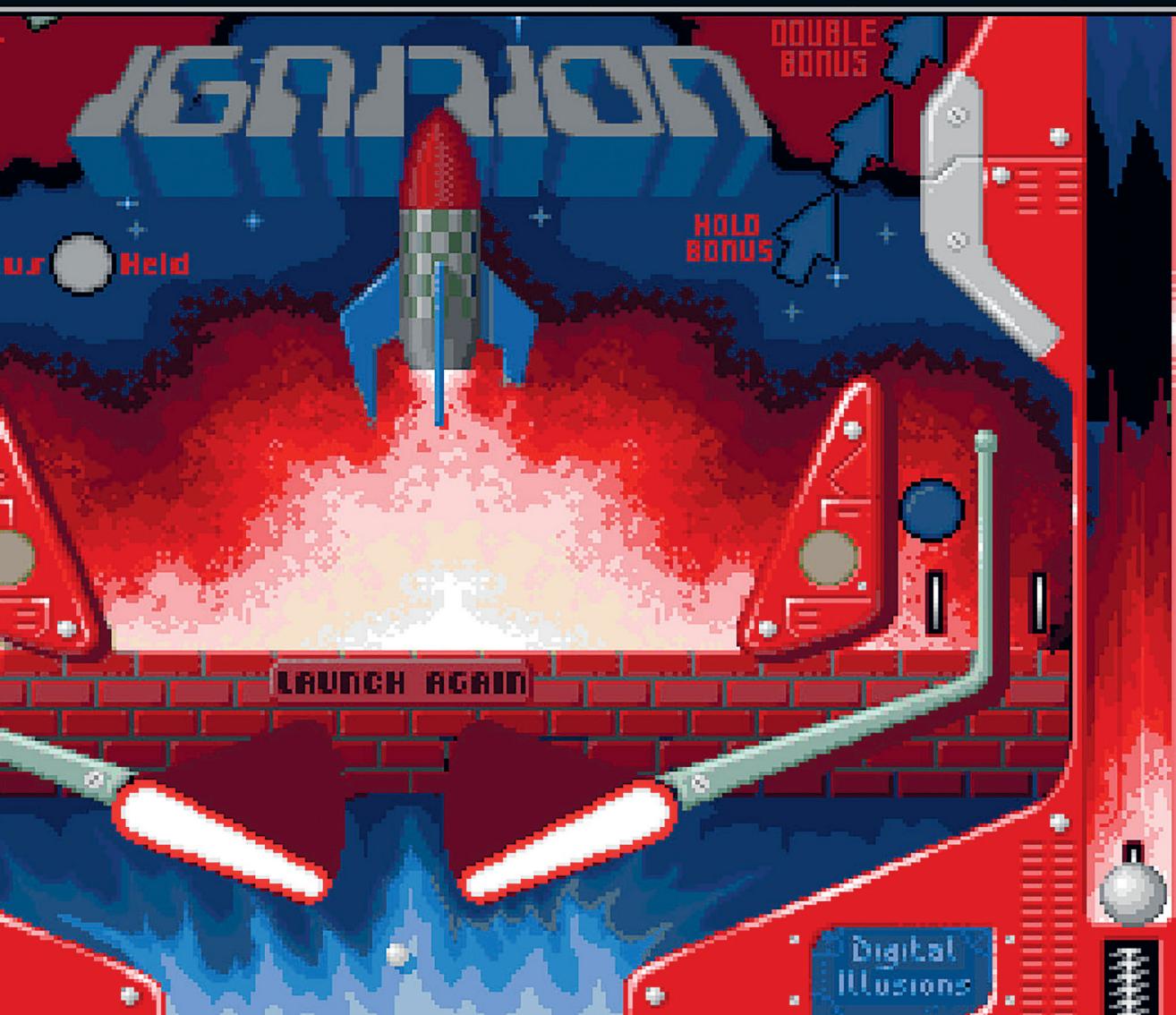
Name : Pinball Dreams
 Year : 1992
 Publisher : 21st Century Entertainment /
 Digital Illusions



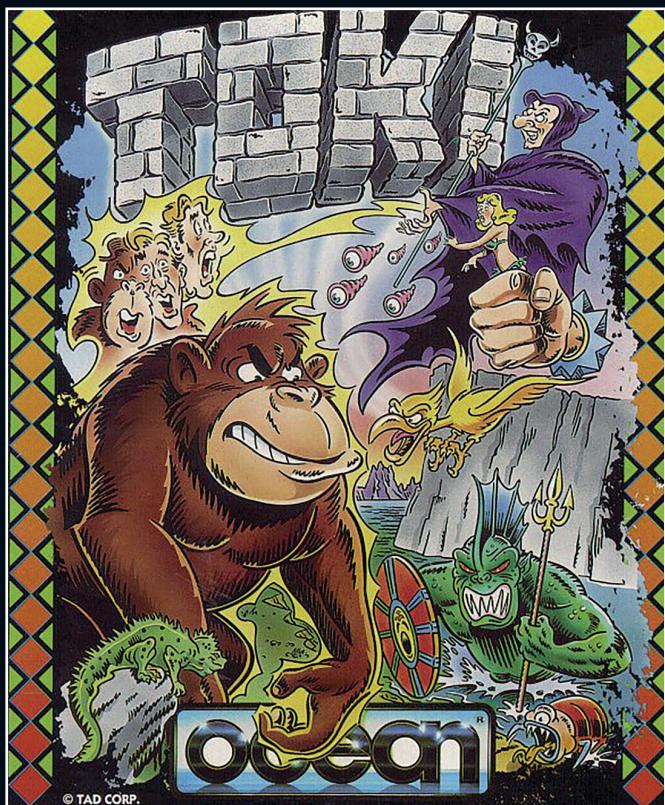
The first game by the team we now know as DICE, *Pinball Dreams* started a pinball revolution with a level of realism that hadn't been seen before. There are four tables in the game covering different themes such as the Wild West for Steel Wheel, space rockets for Ignition, a haunted graveyard for Nightmare and a pop music styled affair for Beat Box.

The excellent graphics are the first thing to impress at the start of play. They really make use of

the Amiga's huge colour palette. The magnificent visuals aren't the only thing in *Pinball Dreams* to impress – the ball movement is absolutely spot-on and the handy tilt function manipulates the ball just like a real table. There is even a dot-matrix-style panel for score display and bonus messages, which adds even more to the arcade-like authenticity. *Pinball Dreams* doesn't slouch when it comes to audio either, with digitised speech and some really memorable tunes.



Name : Toki
Year : 1992
Publisher : Ocean Software / Taito



Toki was one of the less well known of the period's arcade games, named more poetically by its Japanese creators *JuJu Densetsu*. Nevertheless, Ocean's port to the Amiga is a highly impressive one and hard to ignore. The basic plot of this shoot 'em up platformer involves an evil wizard turning a prince into an ape and stealing away his princess.

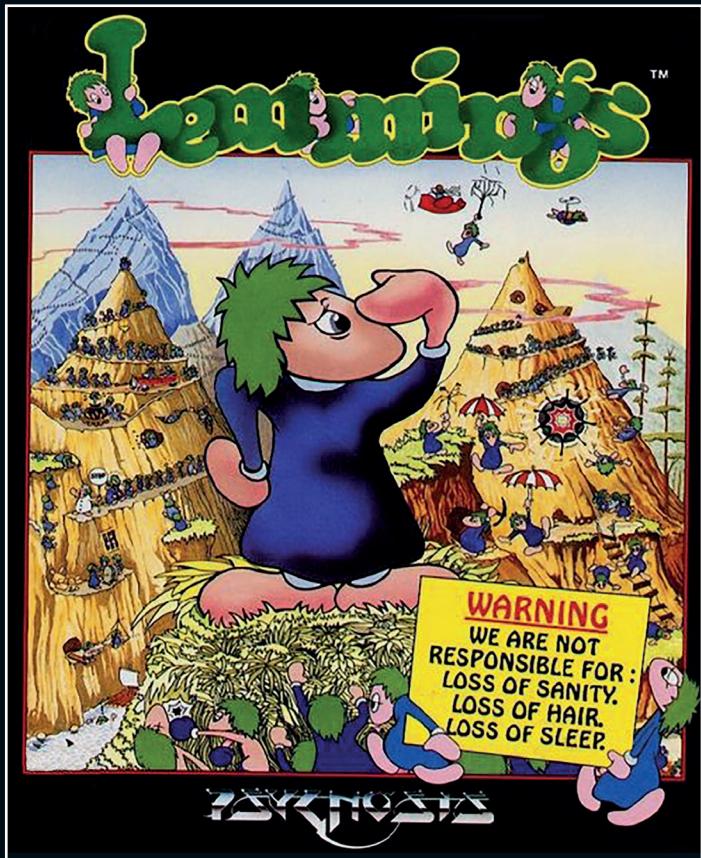
You control the enchanted heroic primate as he makes his way through the levels to rescue her. Toki's main weapons are fireballs he spits at his numerous enemies to kill them; he can also jump on their heads to stun them. *Toki* sure is a very tough game

so thankfully there are various power-ups to collect, such as lucky rabbits' feet which give him bursts of super-ape jumping ability. There are clocks to slow each level's countdown timer, coins that increase the player's score and a hilarious American football helmet for extra protection.

The levels are beautifully designed and feature some seriously big bosses who take up the whole screen. With its wonderful visuals, great music and tight gameplay *Toki* has to be one of the best platformers available for the Amiga and a must-have for fans of the genre.



Name : Lemmings
Year : 1991
Publisher : Psygnosis / DMA Design



Lemmings went on to appear on almost every platform under the sun from ZX Spectrum to Philips CD-i, but the Amiga version is the original and arguably still the best. The idea of *Lemmings* is pretty simple – to guide a troop of accident-prone blue-haired lemmings through each level, while trying to save as many of the creatures as possible.

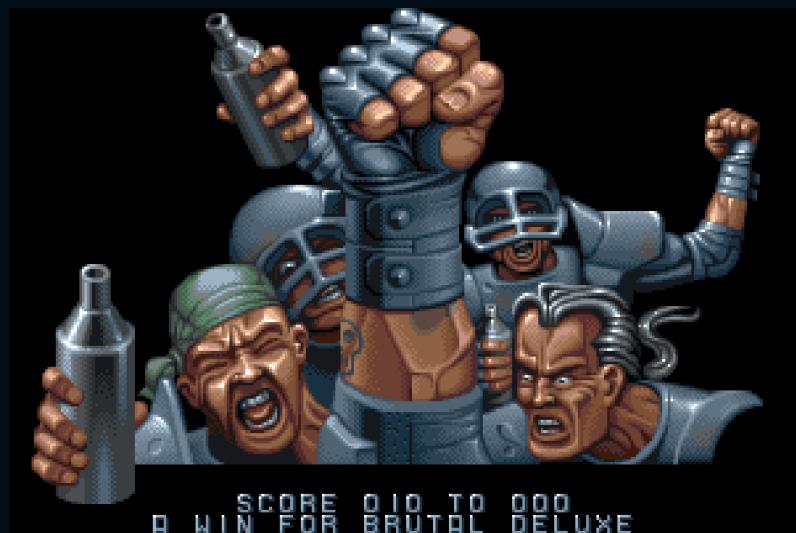
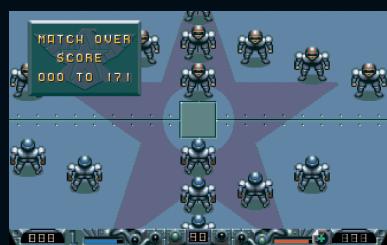
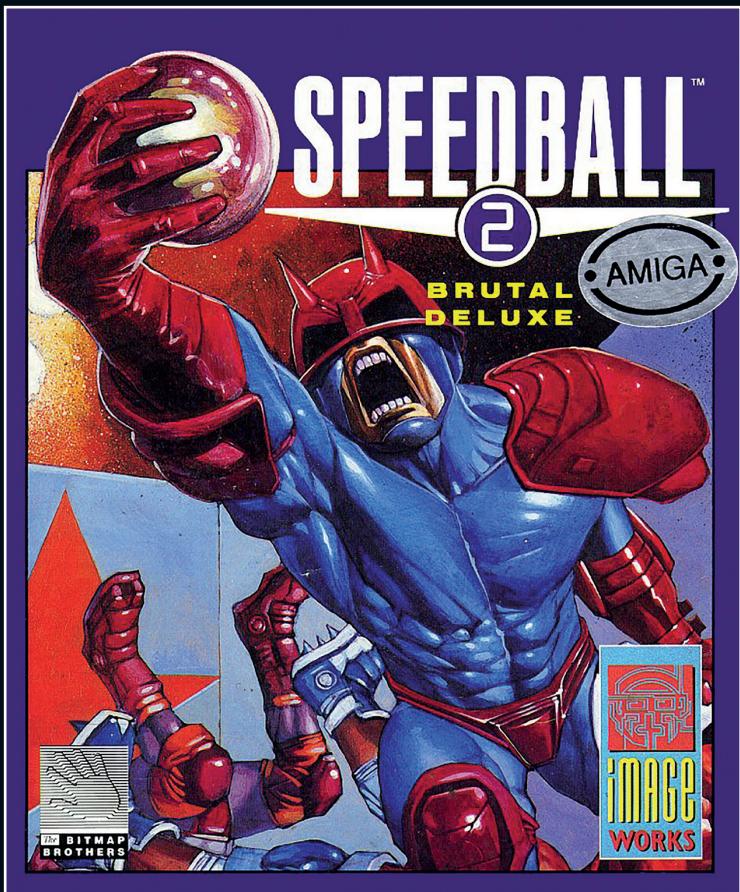
Each lemming can be assigned a skill such as digger, climber, stopper or builder to help them make their way to the exit. Because lemmings are

stupid they just keep on walking until they are stopped or killed.

On each stage there are a limited amount of different skills and a percentage figure of how many lemmings must be saved, and then it's up to the player to find the best way to achieve the goal. If it all goes wrong though, there is the now famous nuke button: press it, sit back and watch lemmings explode all over the screen! *Lemmings* is an all-time classic forever etched in the Amiga's history.



Name : Speedball 2: Brutal Deluxe
Year : 1990
Publisher : Image Works / The Bitmap Brothers



Out of all the talented people to produce video games during the 16-bit years The Bitmap Brothers are right up there among the very best. The quality of the games they created was second to none and *Speedball 2* is regarded by many as the pinnacle of those efforts.

The game plays like a cross between handball and ice hockey and greatly improves on its already excellent predecessor. Your team of players can catch, run with and throw the ball, the latter being

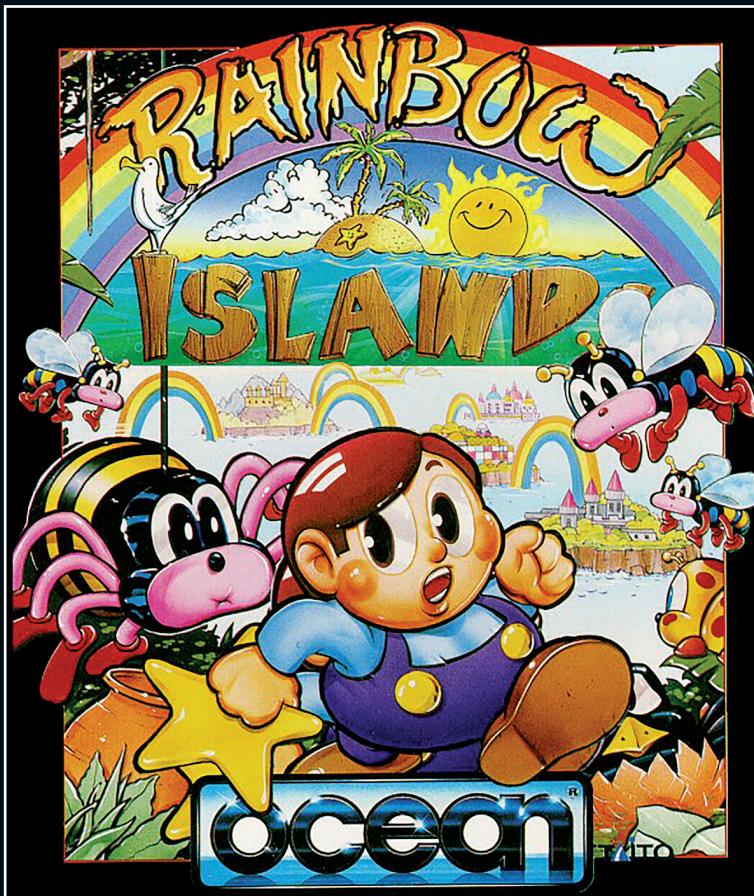
used to both score points and pass. Points are scored by either throwing the ball into the goal or by using a series of multipliers around the arena. There are also power-ups with a temporary effect and coins to be collected to help the purchase of new players or upgrade the current ones. Each player has a limited energy bar and it's actually possible to take players out of the game with enough hits! *Speedball 2* looks great, sounds fantastic and plays even better.



Above: CD32 version



Name : Rainbow Islands
Year : 1990
Publisher : Ocean Software / Graftgold



Rainbow Islands is the second of four Taito arcade games featuring Bub and Bob. The sequel to *Bubble Bobble*, *Bubble Symphony* and *Bubble Memories* followed, and there were two direct sequels: *Parasol Stars* and *Bubble Bobble Part 2*.

In *Rainbow Islands* Bub & Bob are back but this time in their human form and armed with rainbows instead of bubbles. In another change from the first game the levels now scroll, but not horizontally like most platformers – in *Rainbow Islands* you run and jump vertically. And do this swiftly or get swallowed

by the water rising from below if you don't make it to the top in time.

Each island has a different theme but they are all bright and colourful with a host of cute creatures desperate to kill you. Like *Bubble Bobble* when an enemy dies it gives up fruity bonuses, diamonds and sometimes power-ups too. At the end of each island there's a huge end-of-level boss to defeat. *Rainbow Islands* has to rank among the finest arcade conversions ever to grace the Commodore Amiga.



Name : Xenon 2: Mega Blast
Year : 1990
Publisher : Image Works / The Bitmap Brothers



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After the massive success of *Xenon* The Bitmap Brothers came back with this outstanding sequel. Unlike the original this is more of a traditional vertically scrolling shooter with one of the best soundtracks of any game ever made.

Although for the most part the game is fairly generic with its array of enemies, stage designs and end-of-level bosses, it does have a few unique features of its own. The first comes in the utterly insane power-up system that allows every conceivable type of power-up imaginable to be

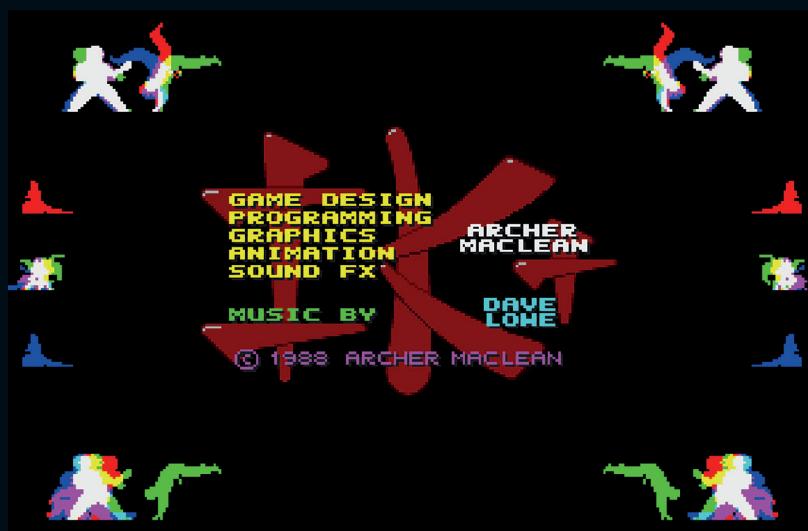
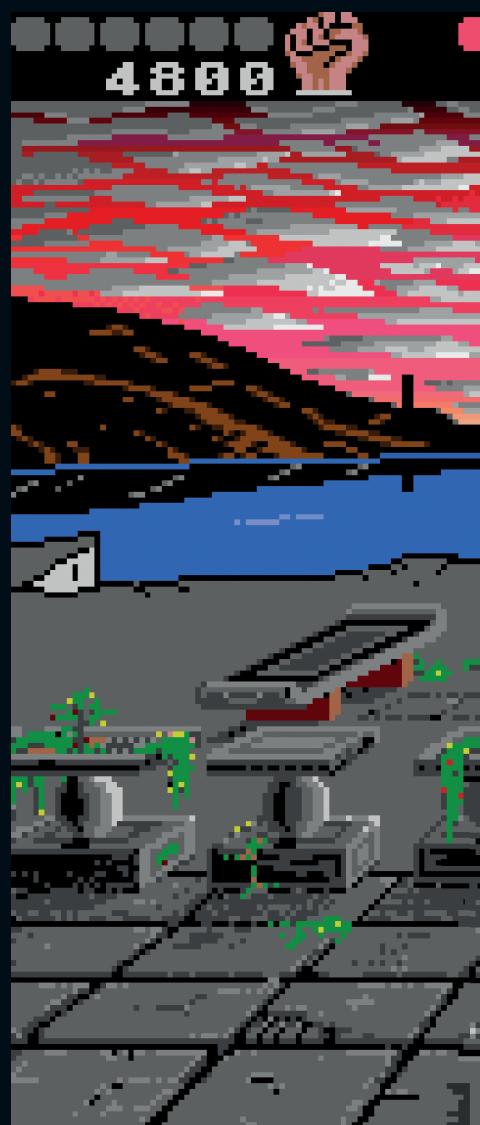
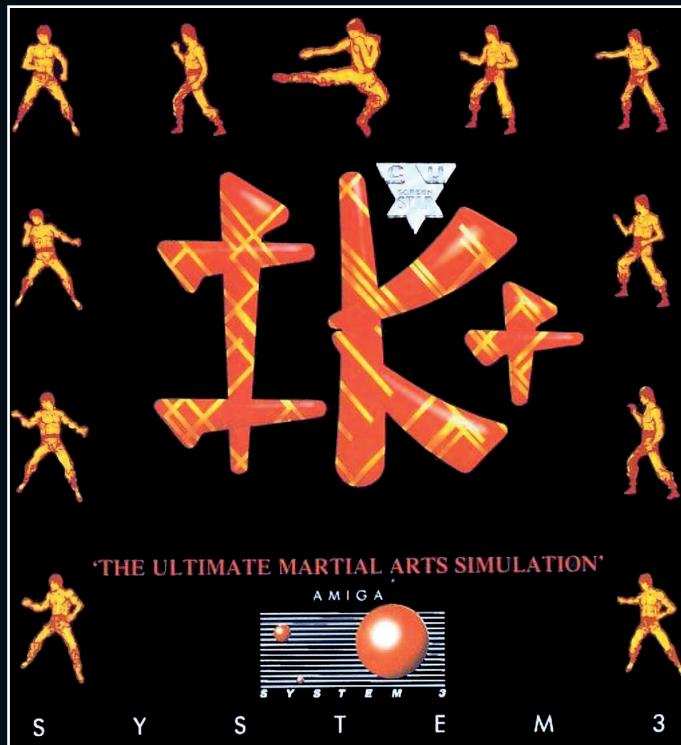
collected and bolted on. After a time the ship becomes some sort of magnetic scrapyard with bits clinging all over the hull.

The second feature is the reverse scrolling – by ‘pushing’ down towards the bottom of the screen you can make it scroll backwards a small amount, this is especially useful when trapped in tight spots or fighting a barrage of fire from a massive boss.

Xenon 2 is every bit as essential for any Amiga owner as its equally excellent forerunner.



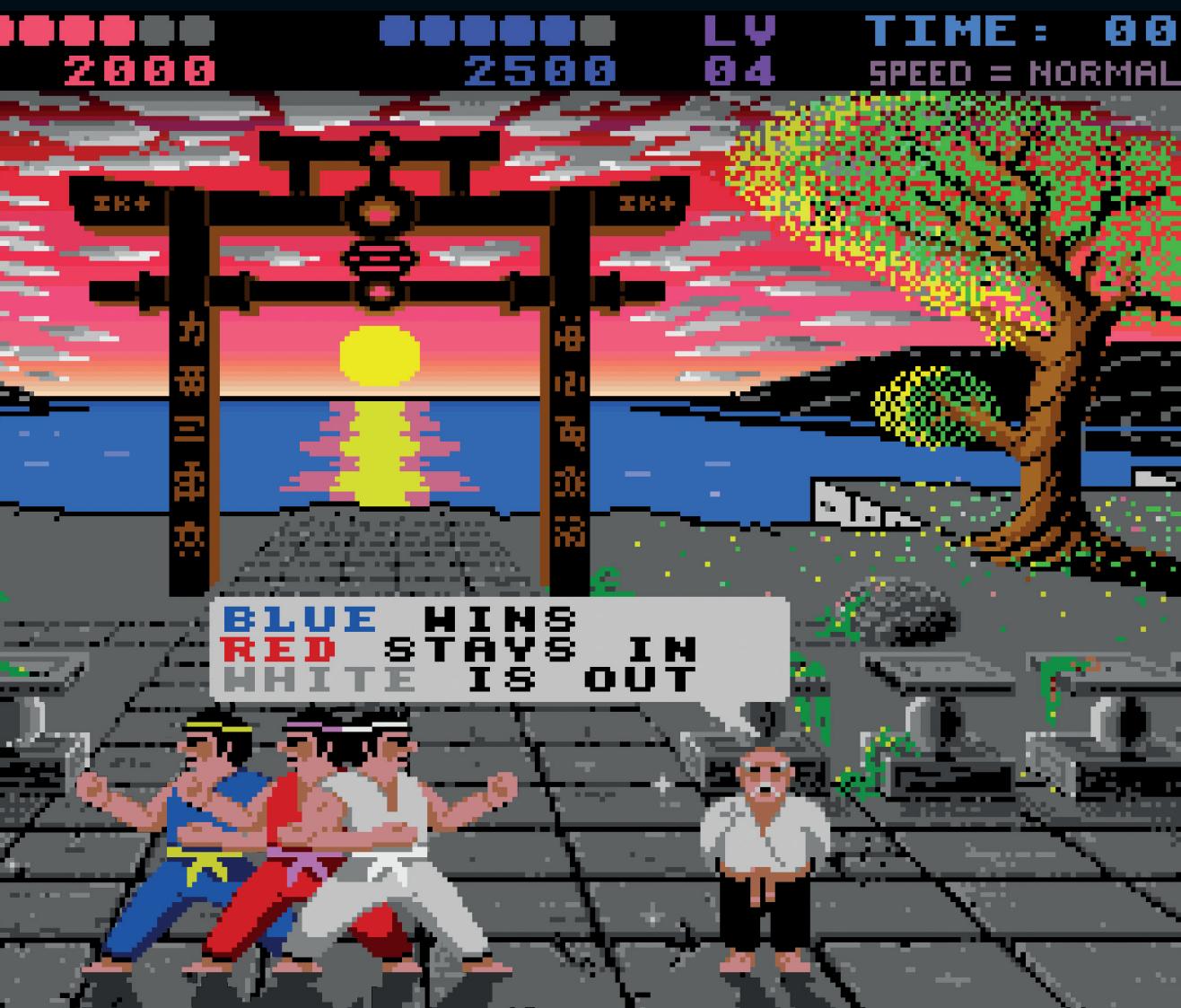
Name : International Karate +
Year : 1987
Publisher : System 3 / Archer MacLean



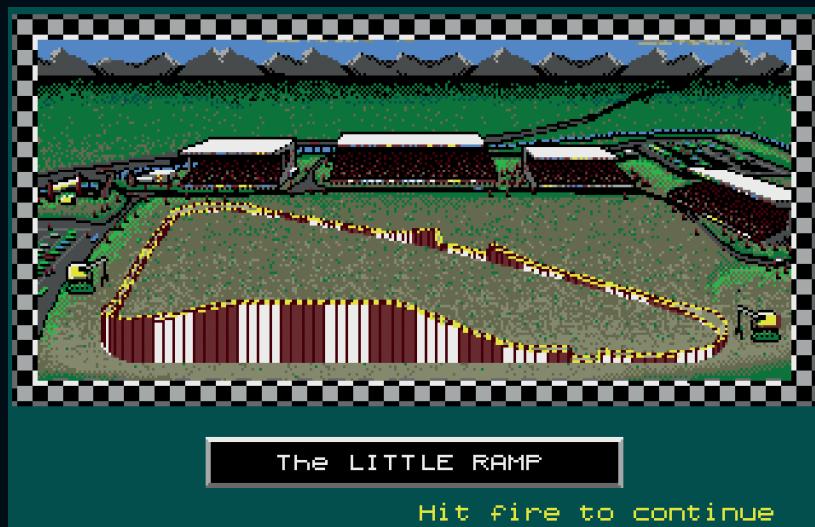
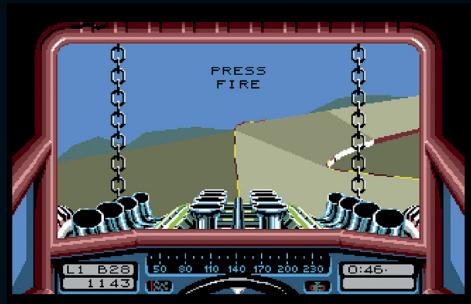
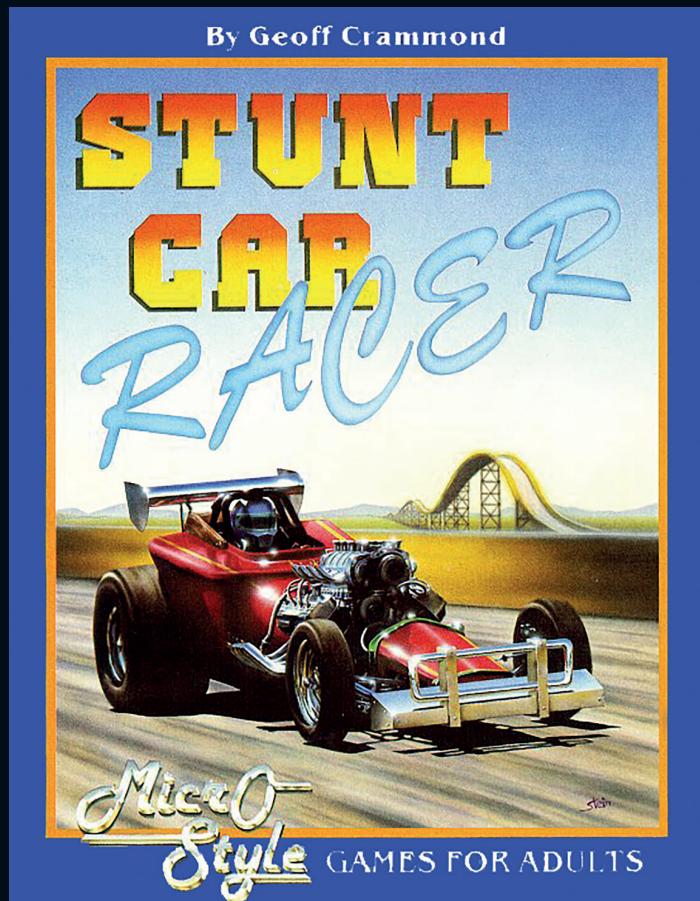
This sequel to *International Karate* adds a number of new features which totally alter the game's dynamic while leaving it feeling very familiar. In the main change there are now two other players to be fought at once, either both are CPU-controlled or CPU plus another human.

In each round the first and second ranked players progress, a matter decided by how many hits are landed on the opponents. Lots of quick movement is required to stay on top and not get hit in the back while you go for the win.

The other great new feature is the addition of crazy bonus stages – such as one where you have to use a big shield to deflect balls being thrown at you. *IK +* also has more than a few secrets to discover, adding even more to the entertainment. With its brilliant animation, great use of colour, attention to detail and wonderful backgrounds *International Karate +* looks amazing. David Lowe's excellent music rounds off the package, making this the best fighting game on the Amiga.



Name : Stunt Car Racer
Year : 1989
Publisher : MicroStyle / Geoff Crammond



Three dimensional games really came into their own with the arrival of 16-bit computers, and *Stunt Car Racer* is possibly the most famous and highly regarded. Programmed by the king of computer racing games, the legendary Geoff Crammond, it was released to widespread acclaim.

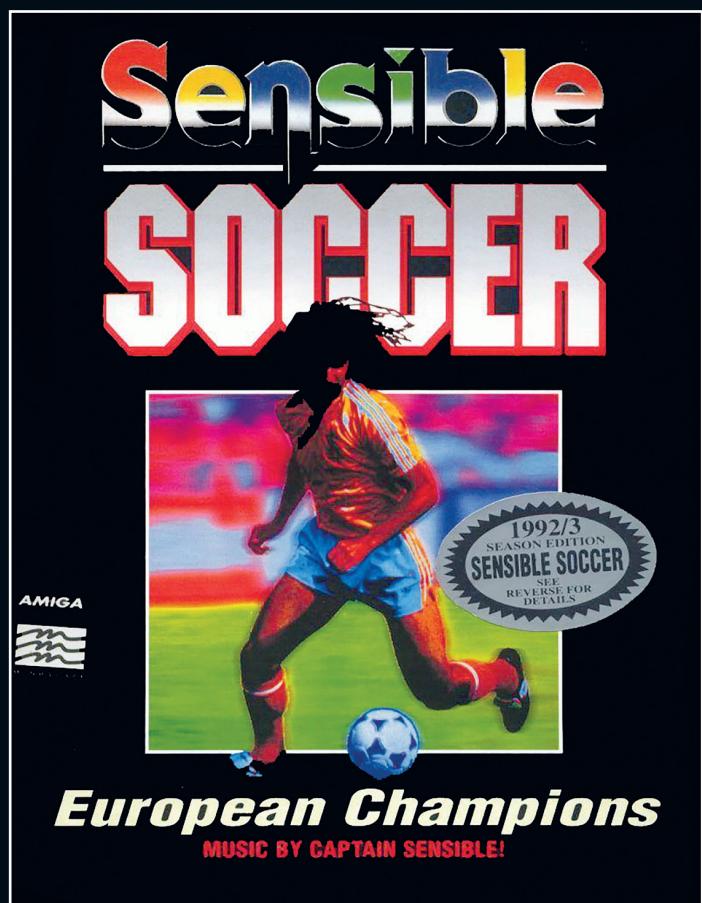
Stunt Car Racer is very different to anything that came before and is best described as a racing game crossed with a roller coaster. The race takes place on a series of tracks high up in the air and it's an easy

matter to fall off. If that occurs a giant crane hoists you back up with a loss of valuable time.

The idea of the game is to compete against opponents in a league and try to win each division. One of the game's unique features is that in addition to having an Amiga-Amiga link-up you can link an Amiga to an Atari ST to enjoy multi-player shenanigans. *Stunt Car Racer* is lauded as one of the best of the 16-bit computer generation for good reason.



Name : Sensible Soccer
 Year : 1992
 Publisher : Renegade / Sensible Software

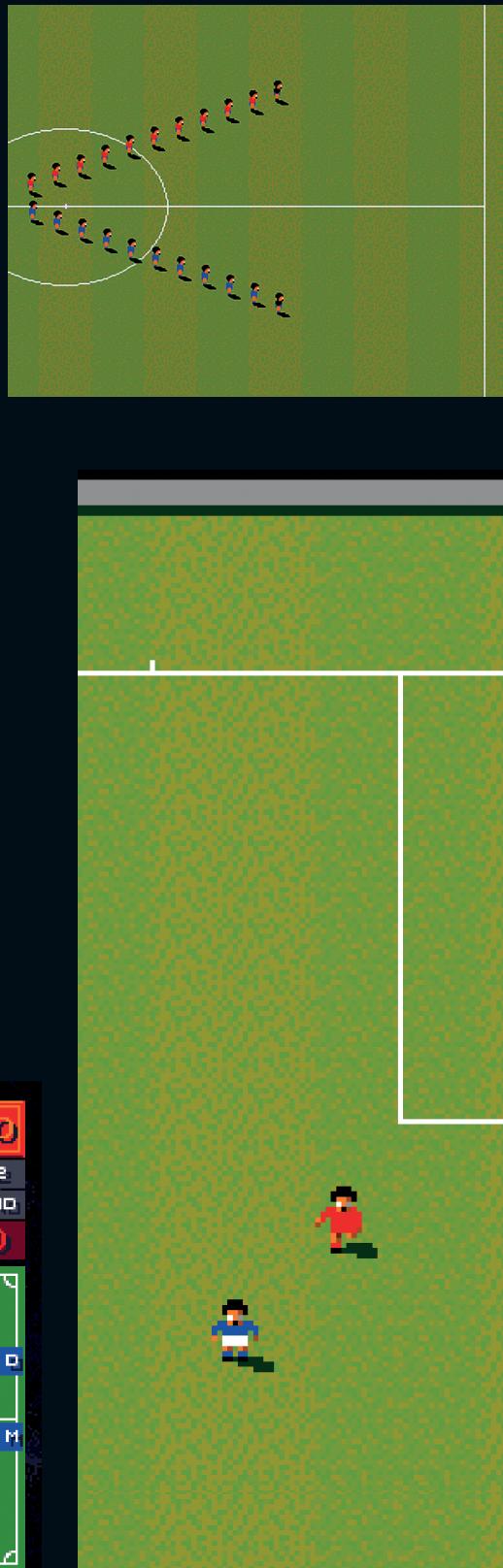


1 LUCA MARCHEGIANI	G
12 GIANLUCA PAGLIUCA	G
6 MARCO LANNA	D
5 A. COSTACURTA	D
13 RICCARDO FERRI	D
2 MORENO MANNINI	D
3 PAOLO MALDINI	D
4 STEFANO ERANIO	M
15 ALESSANDRO BIANCHI	M
14 ALBERICO EVANI	M
8 ROBERTO DONADONI	M
11 GIANLUIGI LENTINI	M ★
7 GIANFRANCO ZOLA	M
10 ROBERTO BAGGIO	F ★
9 GIANLUCA VIALLI	F ★
16 PIERLUIGI CASIRAGHI	F

ITALY **UNDO**

4-4-2 5-4-1 4-5-1 5-3-2
 3-5-2 4-3-3 ATTACK DEFEND

PLAY GAME **VIEW OPPO**



What can be said about *Sensible Soccer* other than it's the greatest football video game ever created? It doesn't look realistic, doesn't really sound realistic and certainly doesn't have any fancy features like player stats or transfers. But despite these apparent drawbacks it manages to be the only football game that's actually as much fun to play as the real thing.

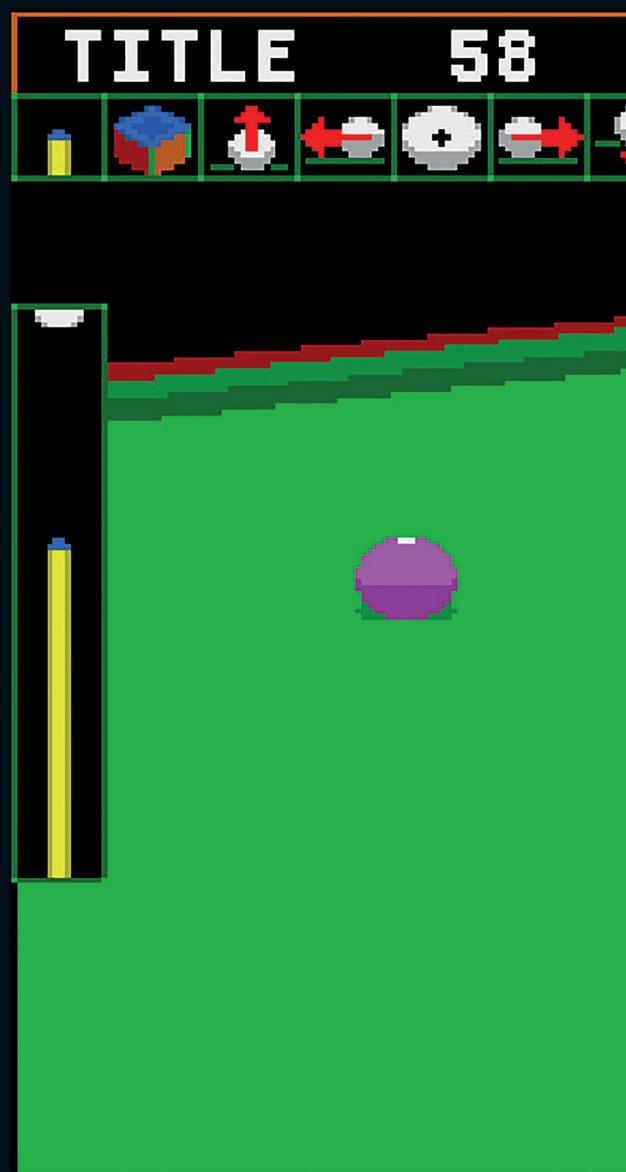
Programmed by legendary Sensible Software, it was the game that knocked the mighty *Kick Off* series from its lofty perch. Because the tiny little

players are viewed from above you can see a large amount of the pitch at once, which makes it easier to perform long passes, crosses and score outlandish goals. *Sensible Soccer* features real teams and players from around Europe, as well as a load of made up ones, but they can be fully edited to keep them up to date.

One of the best features of *Sensi* is the after-touch feature, which allows the ball to be curved by a small amount after it's been kicked.



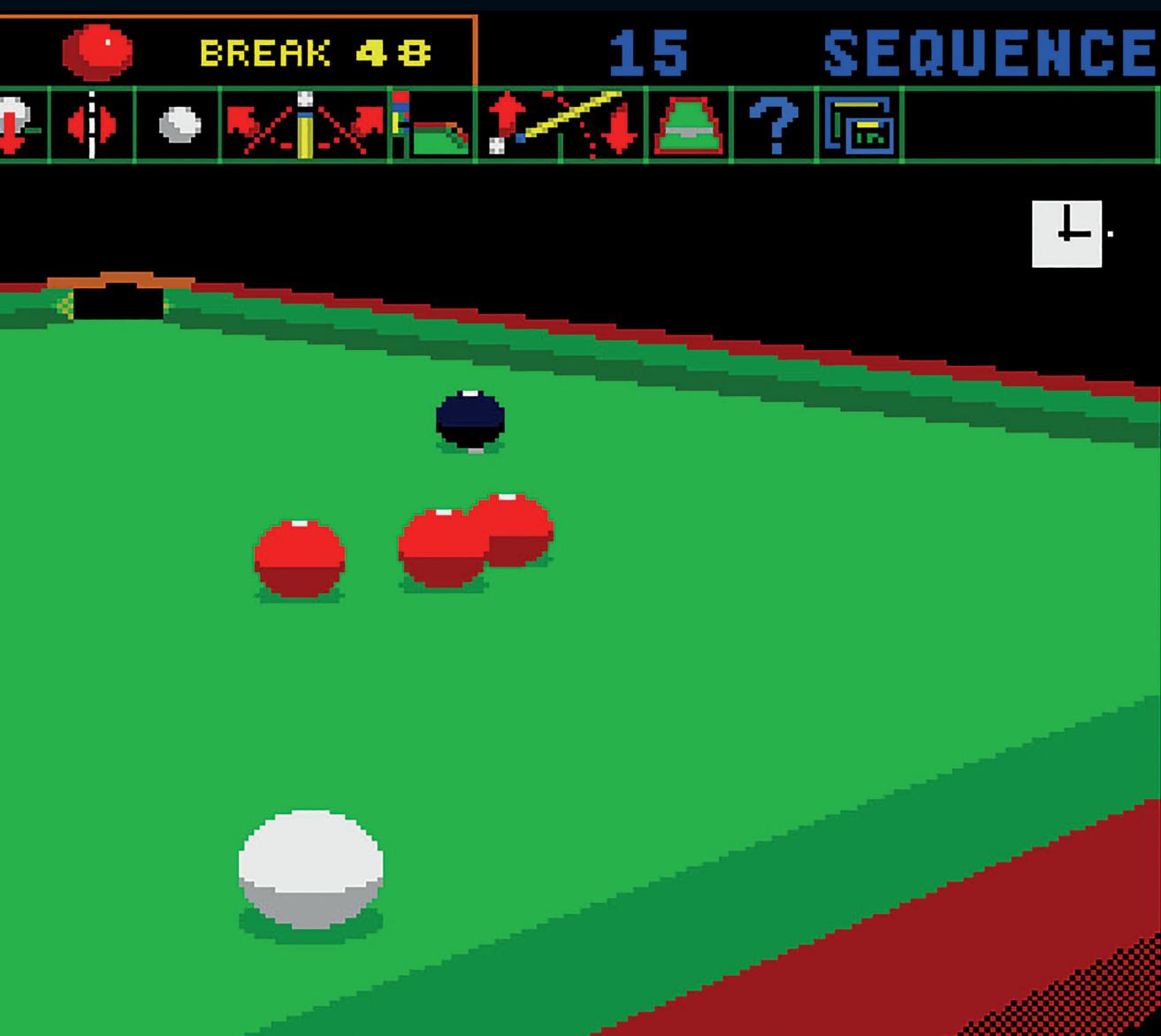
Name : Jimmy White's Whirlwind Snooker
Year : 1991
Publisher : Virgin Games / Archer MacLean



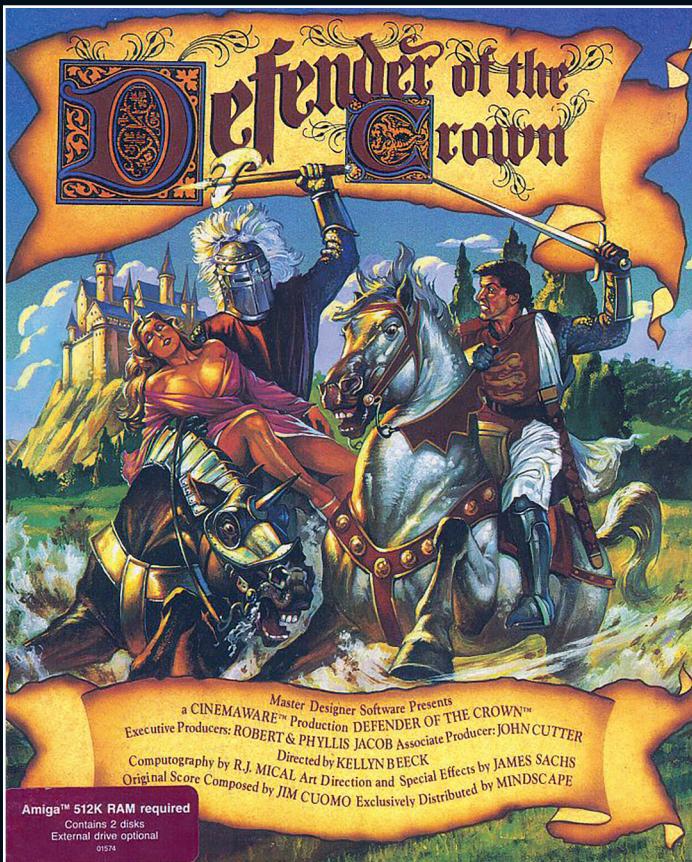
Programmed by the great Archer MacLean, the man behind classics such as *Dropzone* and *International Karate*, *Whirlwind Snooker* utilised the Amiga's capabilities to the best and revolutionised snooker and pool video games. With the exception of *3D Pool* on the Spectrum (1989), before *Whirlwind Snooker* games based on green baize tables were viewed in flat 2D from above. In this title, – officially endorsed by legendary multi-time champion Jimmy White – the 3D makes the game seem far more realistic and

gives the player much greater control over the ball and viewing angles. You can rotate the table 360°, zoom in on any ball, configure all the settings and even use the virtual chalk. The box actually boasts that there are an amazing 164 million different outcomes to any shot, pretty incredible when you think about it.

As serious as the game is, Archer still managed to add a few of his trademark comedy effects including balls that mock you if you take too long to cue up a shot!



Name : Defender of the Crown
Year : 1986
Publisher : Cinemaware / Master Designer



Those who know their Amiga history often quote *Defender of the Crown* as being the first real game changer in the computer's history and the one that set it apart from the competition thanks to some stunning graphics and sound. It's also the game that put publishers Cinemaware on the map.

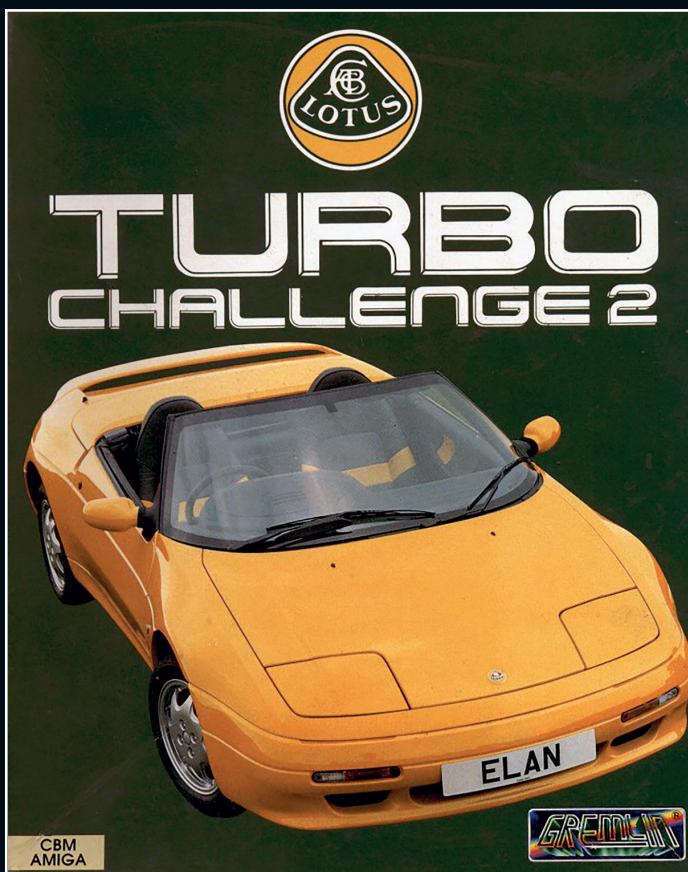
Defender of the Crown is a strategy war game with arcade elements. You are a Saxon knight leading an army against the invading Norman forces. The sole objective is to capture all the counties of both England

and Wales, and then unite them as king. Success is awarded through building armies, gathering weapons and collecting gold by sacking castles.

The arcade elements revolve around many of these actions in a series of mini-games. For example, on sacking an opponent's castle the player must lead three soldiers into its precincts and battle the opposing troops to steal the gold. Another sequence features a joust against challengers, which is a great deal of fun.



Name : Lotus Turbo Challenge 2
 Year : 1991
 Publisher : Gremlin Graphics / Magnetic Fields



The box art features the Lotus logo at the top left, followed by the model name "ESPRIT TURBO SE" in bold letters. Below the title is a photograph of a red Lotus Esprit Turbo SE. To the right of the car are two smaller images: one showing the interior dashboard and steering wheel, and another showing a close-up of the interior door panel.

MAX SPEED: 163 MPH	EQUIPMENT
0-60 MPH: 4.7 SECONDS	ELECTRIC WINDOWS
0-100 MPH: 11.9 SECONDS	CENTRAL DOOR LOCKS
MAX POWER: 264 BHP	ELECTRIC HEATED MIRRORS
MAX TORQUE: 361 LB FT	AIR CONDITIONING
MEASUREMENTS IN INCHES	ICE WARNING SYSTEM

Technical specifications and measurements for the Lotus Esprit Turbo SE are listed. A technical drawing of the car with dimensions is also provided.



As excellent as the original *Lotus Esprit Turbo Challenge* (1990) was, this sequel took things to a new level. Developers Magnetic Fields ditched the lap-based touring car realism of the first game and instead went for an arcade style racer much in the vein of Sega's classic *Out Run*.

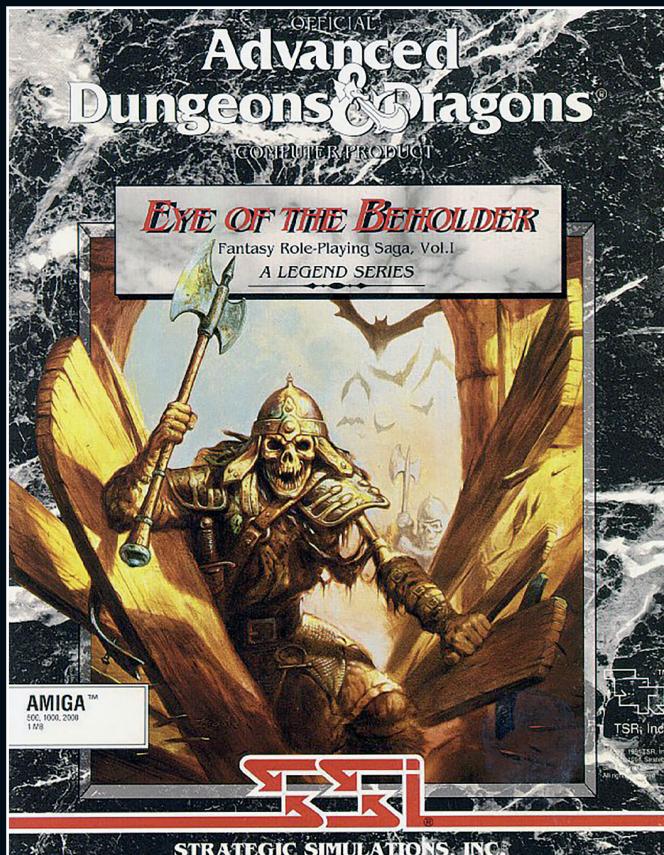
Note too that designers Shaun Southern and Andrew Morris omitted the word 'Esprit' from the title, focusing instead on the Lotus brand. This was due to the addition of a new car, the much lighter weight Lotus Elan SE. In another significant change

Lotus 2's single-player mode uses all of the game screen instead of half, as in the original, and the player drives an Elan on odd levels and the Esprit on even ones.

Another great feature of this excellent racing game is the facility to link one Amiga to another, or even to an Atari ST, so up to four can play at the same time. You can also return to where you left off with the addition of a handy password feature. There is no doubting that *Lotus Turbo Challenge 2* is up there with the very best Amiga racers.



Name : Eye of the Beholder
Year : 1991
Publisher : Strategic Simulations, Inc. (SSI)
 Westwood Studios



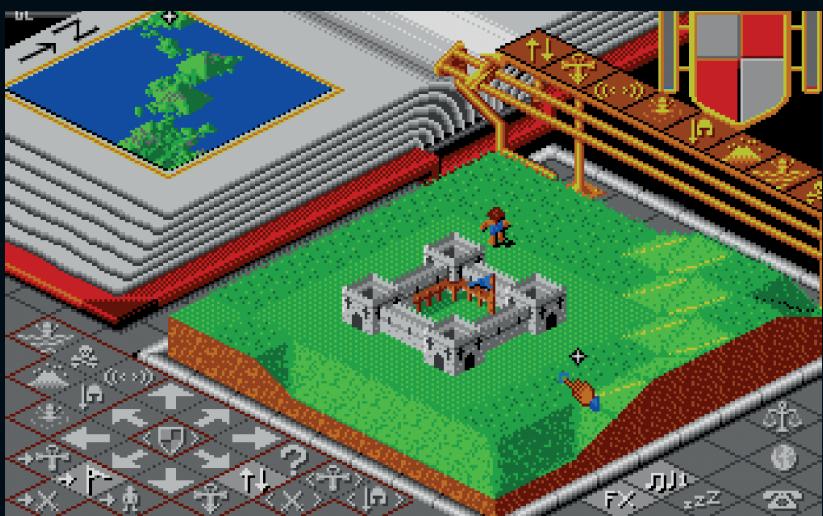
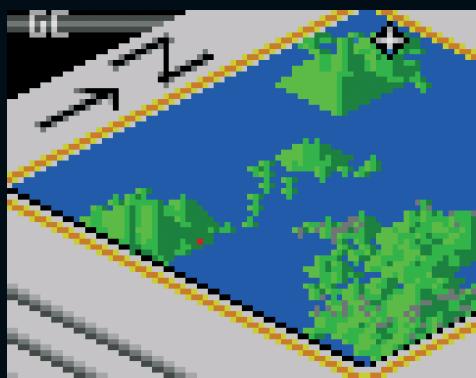
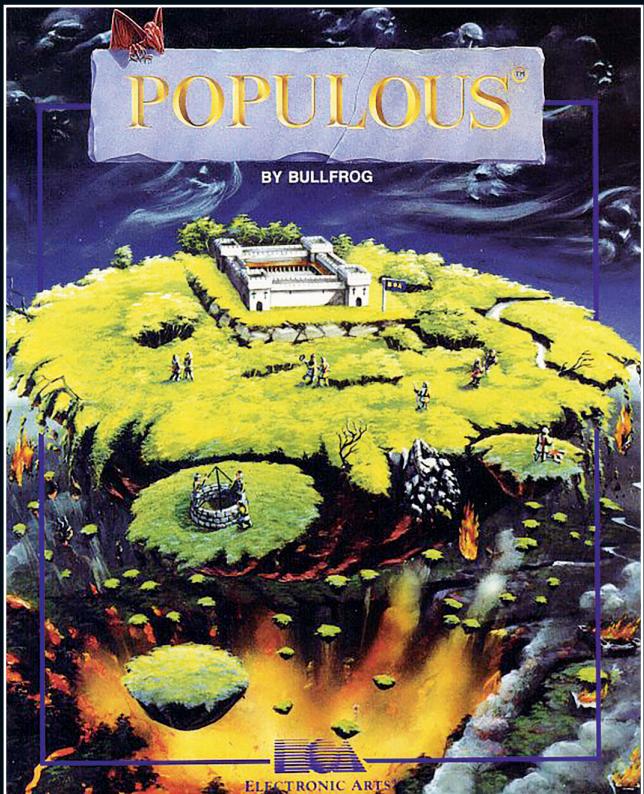
Something evil lurks beneath the city. What to do about it? The lords of Waterdeep summon a band of heroes to go and investigate. But someone or something has been watching the proceedings and after the heroes enter the sewers, the ceiling collapses behind them leaving them trapped. The only way out is down, into dungeons filled with monsters, traps and fiendish puzzles. *Eye of the Beholder* is a dungeon crawler RPG with a first-person perspective based on the rules of the Advanced Dungeons & Dragons 2nd Edition.

The starting party consists of four characters and up to two NPCs can join the squad later. Combat and magic happens in real time, and in total there are over forty different spells.

A clever point-and-click interface makes exploring, fighting, spell casting and handling objects intuitive. While *Eye of the Beholder* is essentially a *Dungeon Master* clone in concept, it very much takes the genre to the next level. Even with several sequels following, the original remains the most memorable.



Name : Populous
Year : 1989
Publisher : Electronic Arts / Bullfrog



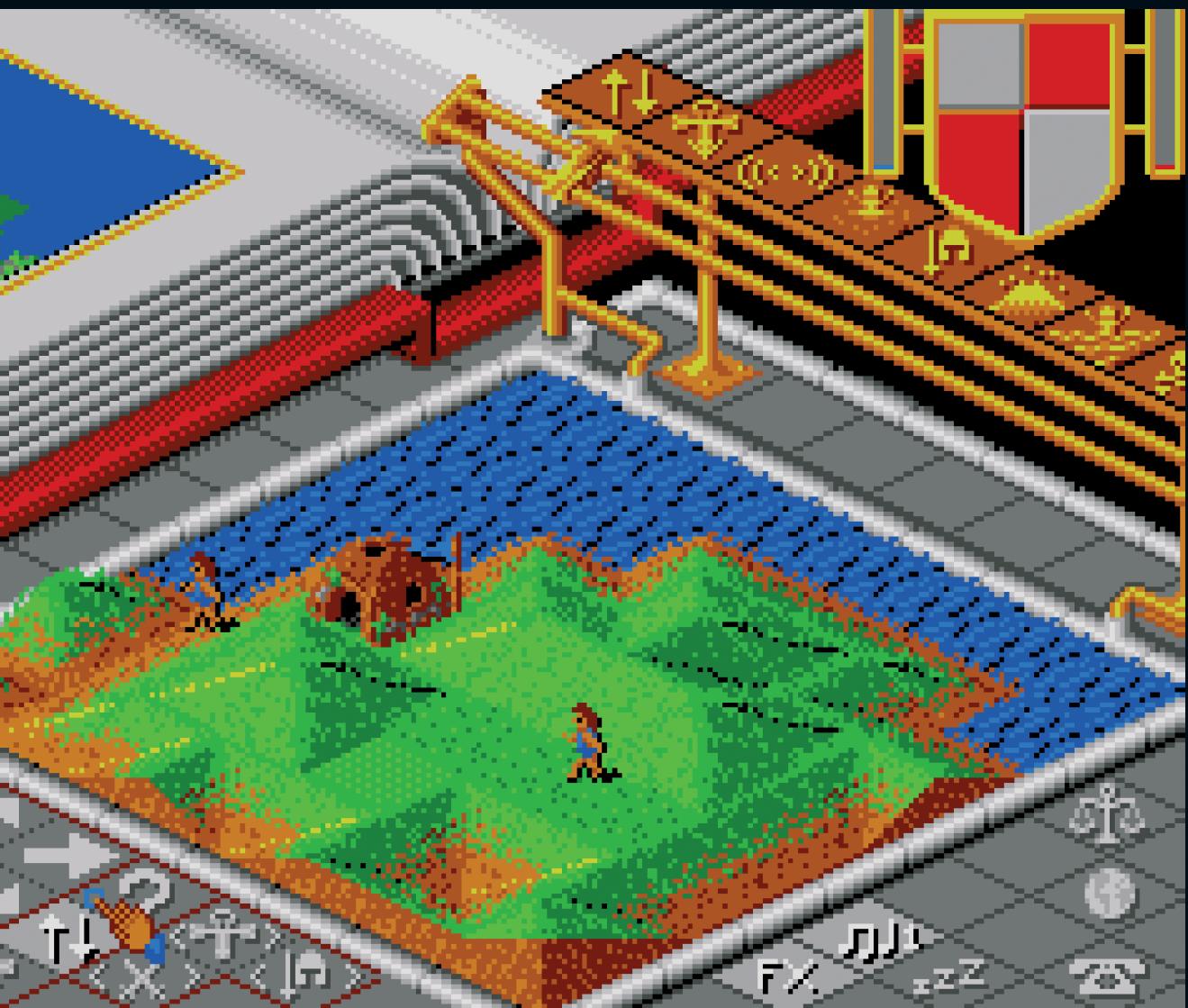
From the mind of the often controversial Peter Molyneux came *Populous*, widely regarded as the first 'god game'. While in its basic concept it doesn't sound like much fun – the key element is the raising and lowering of land – in practice it becomes engrossing in the attempt to increase player powers, eliminate rival deities and punish non-followers with earthquakes and lightning.

Played from an impressive isometric 3D perspective, all actions are performed through using the control panel which surrounds the play area. In

all there are an incredible 500 levels to work through before players may call themselves the one true god.

The key to the game is generating mana, which is done by gaining followers and keeping your existing followers happy. The more mana you produce the more features and abilities are unlocked.

Populous is a timeless classic and a real time-vampire that can engage unwary players for hours on end. It was succeeded by an equally excellent *Populous II: Trials of the Olympian Gods* which deserves a look.



Name : Falcon
Year : 1989
Publisher : Spectrum Holobyte / Sphere



While many flight simulators were released for the Amiga over the years, *Falcon* was definitely the one to set the bar. Featuring a fully 3D polygon world, realistic controls and varied campaigns (also allowing the addition of new ones via data disks), *Falcon* is all-inclusive.

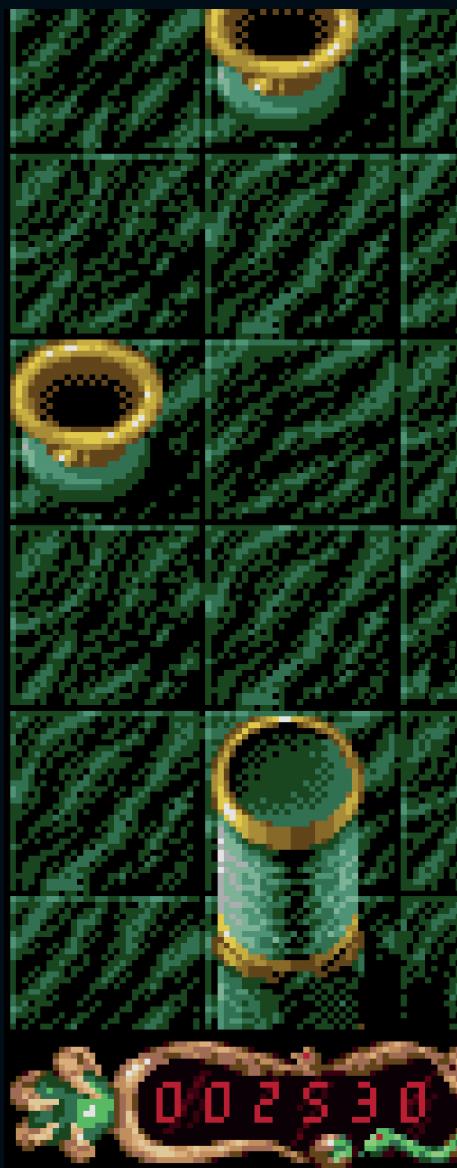
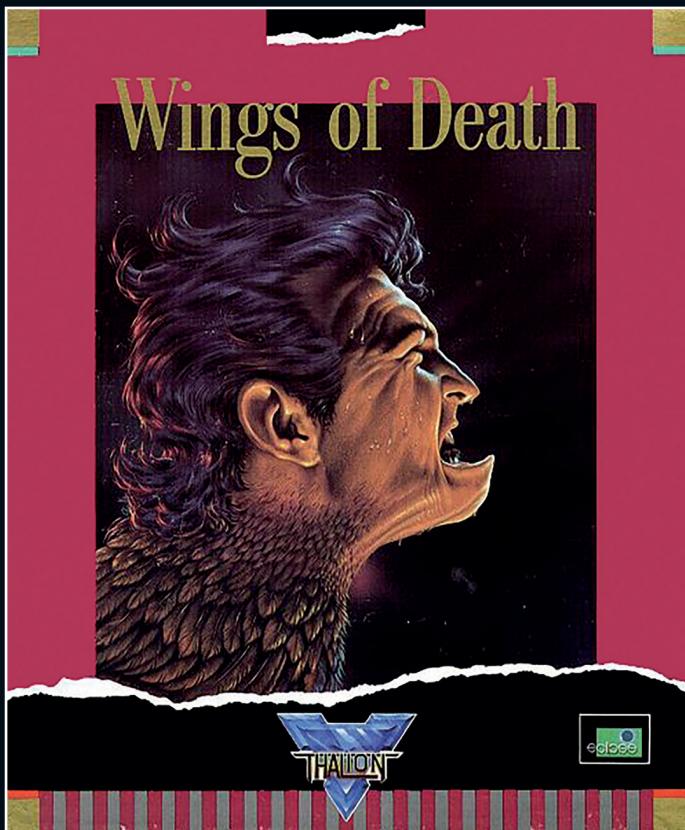
You are at the controls of the eponymous aircraft, an American F-16 Falcon fighter jet, while enemy forces fly Russian MiG 21s, re-enacting the Cold War. But in the game there are both ground and air targets as well as a limited amount of

weapons available to take out both. In total *Falcon* offers twelve missions to complete and those may be trebled with the addition of the two expansion packs *Falcon Operation: Counterstrike* and *Falcon Operation: Firefight*.

Falcon won numerous awards for its excellence, including Best Simulation at the 1989 Golden Joystick awards and was also voted the 8th best game of all-time in *Amiga Power* magazine. *Falcon* is more than enough to satisfy any budding pilots out there.



Name : Wings of Death
Year : 1990
Publisher : Thalion / Eclipse Software



At a first glance *Wings of Death* might seem to be little more than another vertically scrolling shooter, but don't be fooled – this is one of the very best out there for the Amiga.

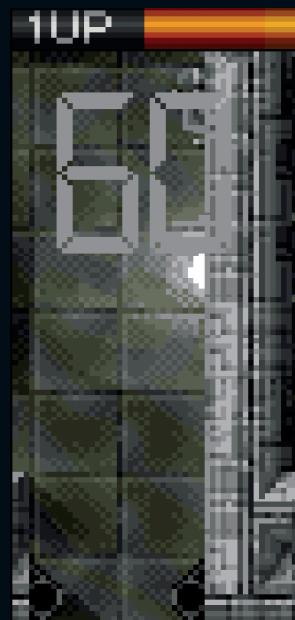
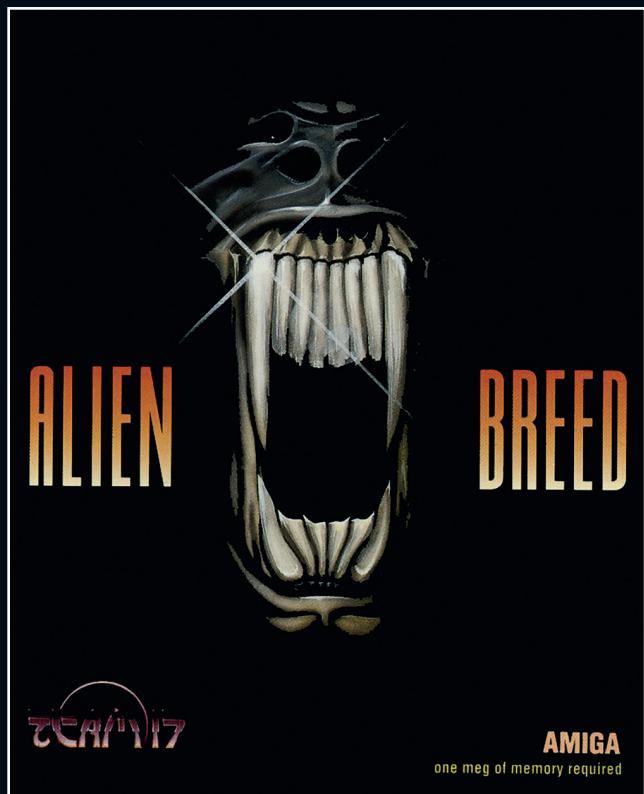
Although particular praise is always given to the stunning visuals and sublime soundtrack by Jochen 'Mad Max' Hippel, you must also take notice of the wonderful game design with its well-crafted levels and almost perfect difficulty curve. *Wings of Death* also takes advantage of the Amiga's advanced

hardware with full use being made of all the custom chips. One of *Wings of Death*'s more interesting features is the ability to transform into different creatures. Starting out as an eagle you can increase firepower by transforming into mythical flying beasts such as a griffin and even a huge dragon.

The ultimate mission is to return to human form...as boring as that may sound. *Wings of Death* was joined just a year later by an equally impressive sequel in the form of *Lethal Xcess*.



Name : Alien Breed
Year : 1991
Publisher : Team 17



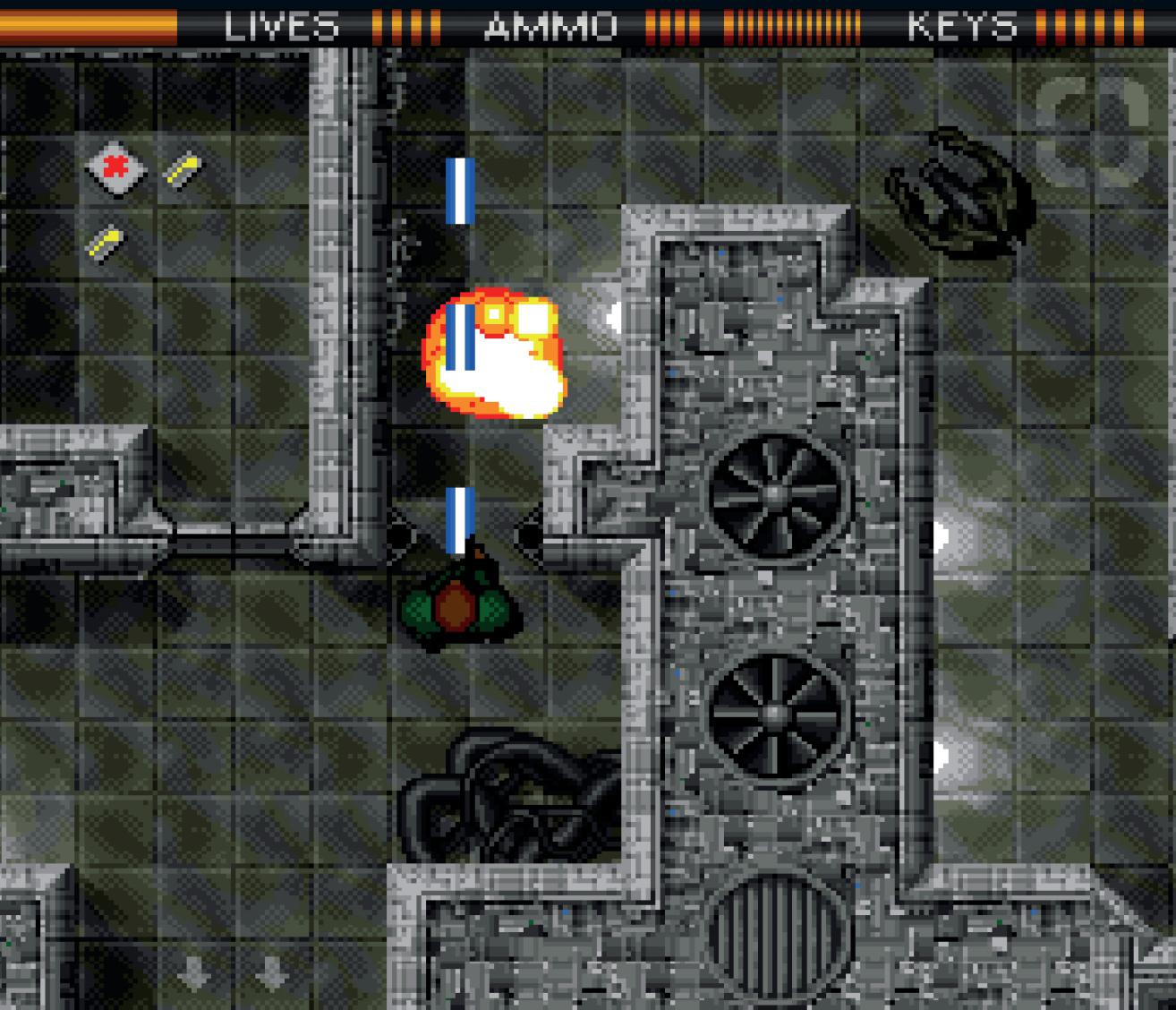
Dungeonly crawlers have always been a hugely popular genre, right from the day that Atari first unleashed *Gauntlet* on arcade audiences. Team 17 certainly can't be credited for originality with *Alien Breed*, it most certainly takes its cue from *Gauntlet* and, even more so perhaps, Sega's *Alien Syndrome*. But what it does is to take those games, add in the atmosphere from the *Alien* film franchise and then raise it all to a new level.

Not content with serving up an almost endless supply of xenomorphs, *Alien Breed* also stacks the

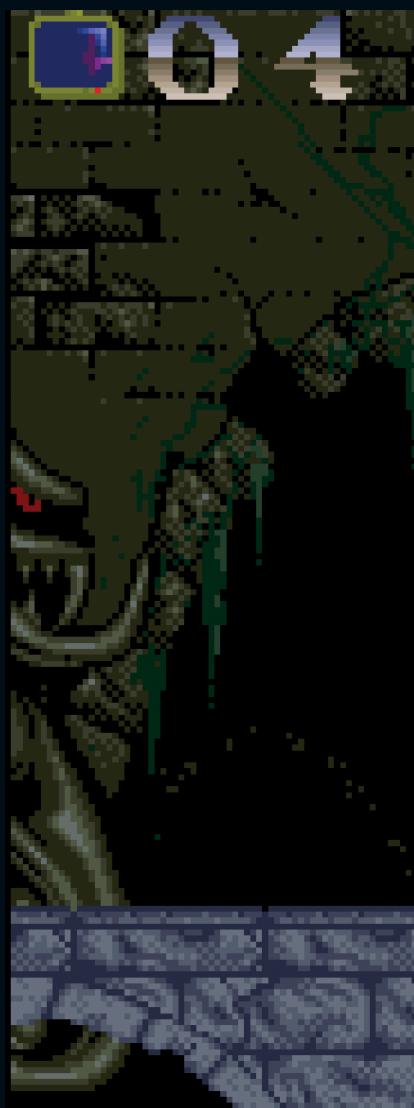
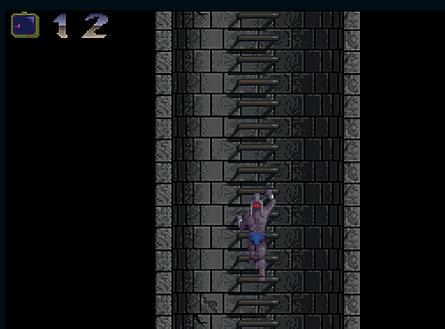
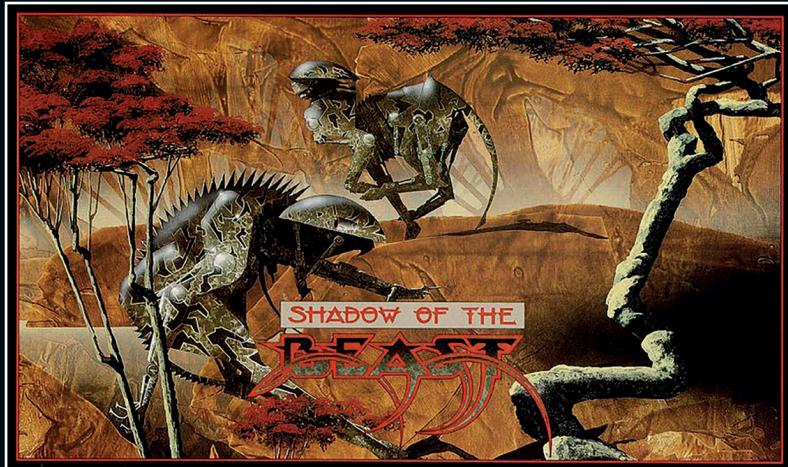
odds against the player even more by sending in some huge bosses. Thankfully Team 17 evened up the odds a little by also providing some pretty serious firepower that can be upgraded throughout the game.

Alien Breed has had numerous sequels (eight to date excluding the 1992 *Special Edition*, the last being *Alien Breed 3: Descent* in 2010) that take the game even further, adding new elements with each revision. Best to start with the original, though, to give yourself a taste of what's to come!

LIVES AMMO KEYS



Name : Shadow of the Beast
Year : 1989
Publisher : Psygnosis / Reflections

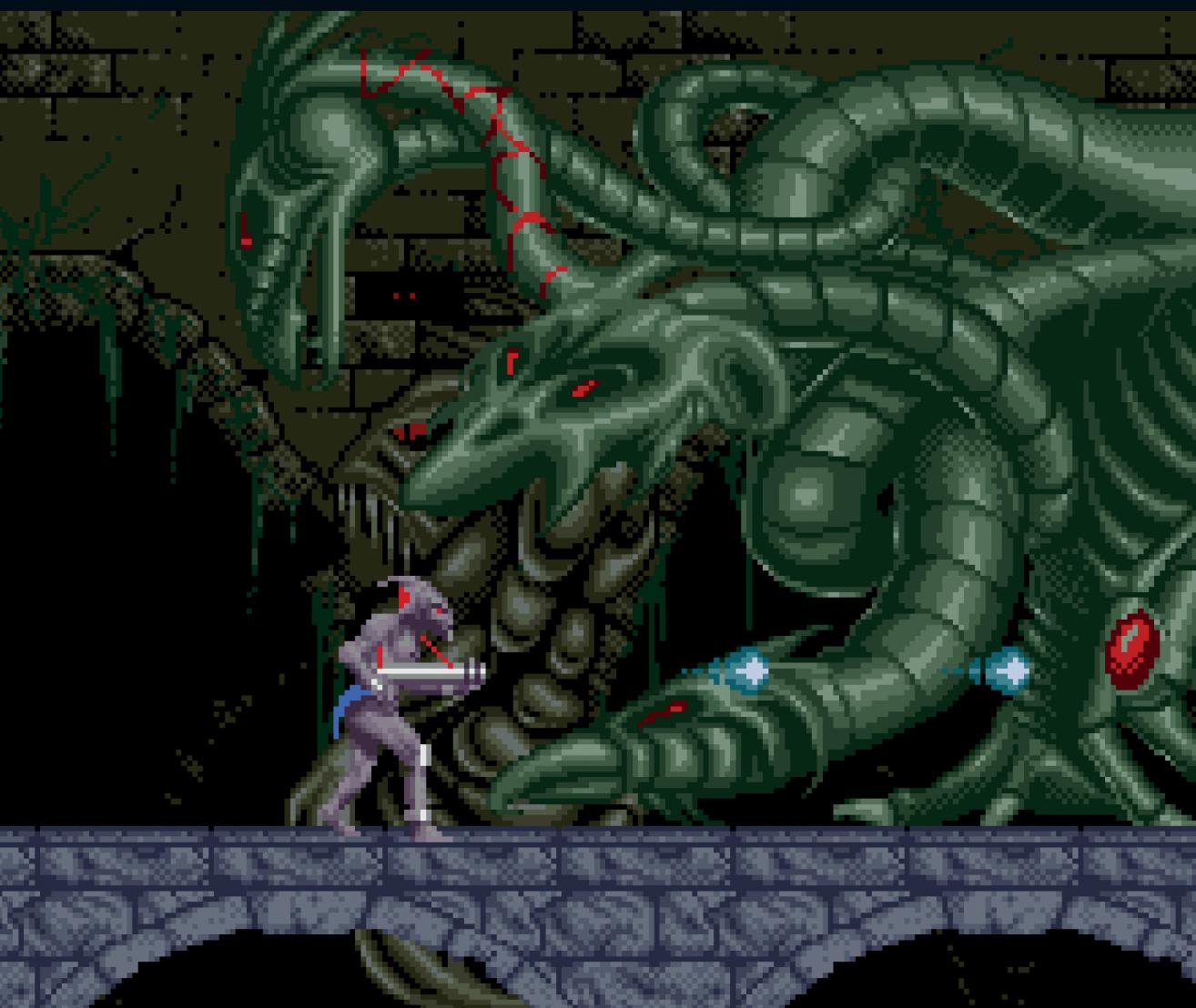


If there is one game that is synonymous with the Commodore Amiga then it's *Shadow of the Beast*. This graphically stunning Psygnosis arcade-adventure almost single-handedly turned the tide against the Atari ST and positioned the Amiga as the number one 16-bit computer.

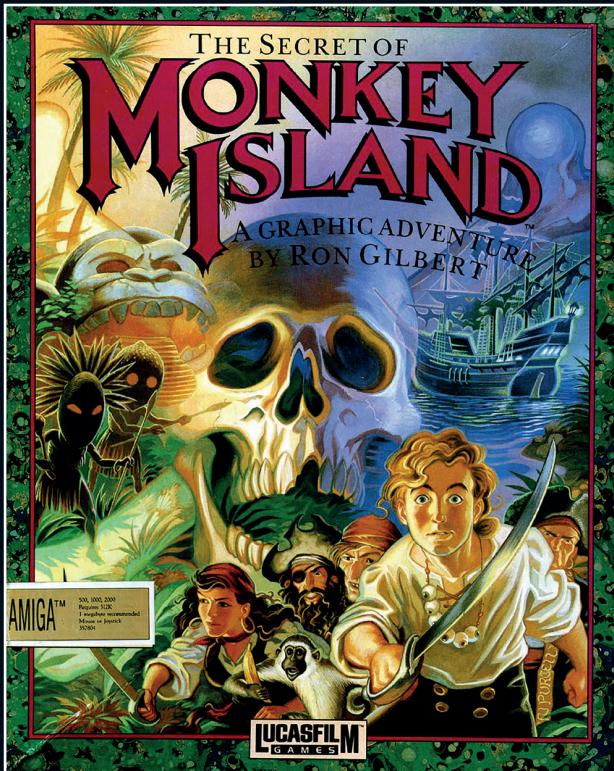
Martin Edmondson's game originally started off as a demo to show just what the Amiga could do, but Psygnosis liked it so much they asked Reflections to turn it into a real game. The end product is sometimes criticised for a lack of depth, but when a

game looks and sounds this good who cares?

Featuring up to twelve layers of parallax scrolling, double the colours of a normal Amiga game, pixel perfect animation and a wonderful soundtrack by David Whittaker there really is no better game to showcase just what the stock Amiga is capable of – including the unmistakeable Roger Dean artwork for the packaging. Two sequels followed in 1990 and 1993 (*Shadow of the Beast II* and *III*), as well as a modern remake for the PlayStation 4 in 2016, but it's the original that set the gold standard.



Name : The Secret of Monkey Island
Year : 1990
Publisher : Lucasfilm Games



Open
Close
Push
Pull

Walk to
Pick up
Talk to
Give

With the Amiga, when it comes to point-and-click adventures, there can only be one entry – Lucasfilms' wonderful *The Secret of Monkey Island*. Designed by industry legends Ron Gilbert, Tim Schafer and Dave Grossman it was the fifth game to use their trademark SCUMM engine.

Taking the role of wannabe pirate Guybrush Threepwood you must seek out the pirate elders and perform the missions they set in order to reach your goal and take command of the high seas.

The beauty of *Monkey Island* is that it's full of different subplots, puzzles and a huge dollop of humour which entertains like no game before.

While it won't win any awards in the graphics department, a special note must be made of the outstanding soundtrack. *The Secret of Monkey Island* might have been followed up by four even better sequels, but it was still the first outing that changed the world of point-and-click graphic adventures forever.

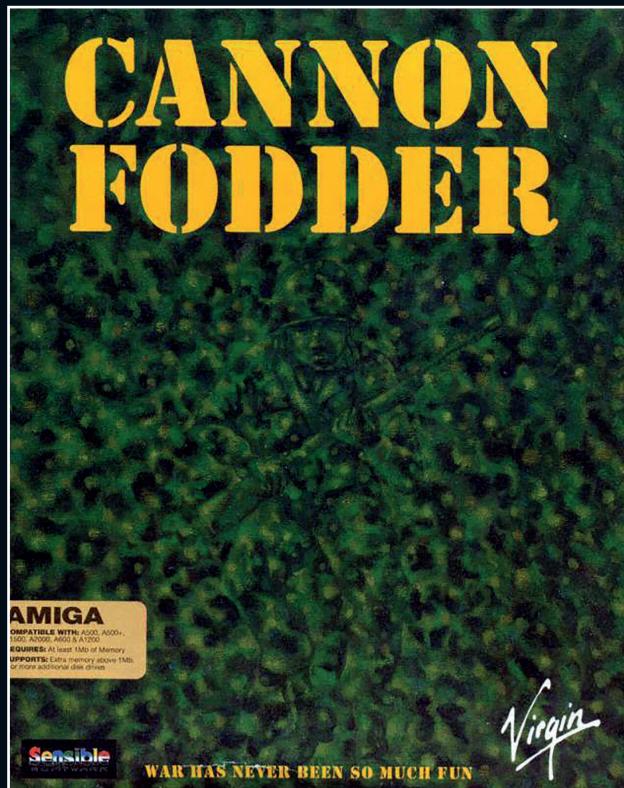


Walk to

Use
Look at
Turn on
Turn off

303 pieces of eight
meat with condiment
fish
rubber chicken
sword
shovel

Name : Cannon Fodder
Year : 1993
Publisher : Virgin Interactive /
Sensible Software



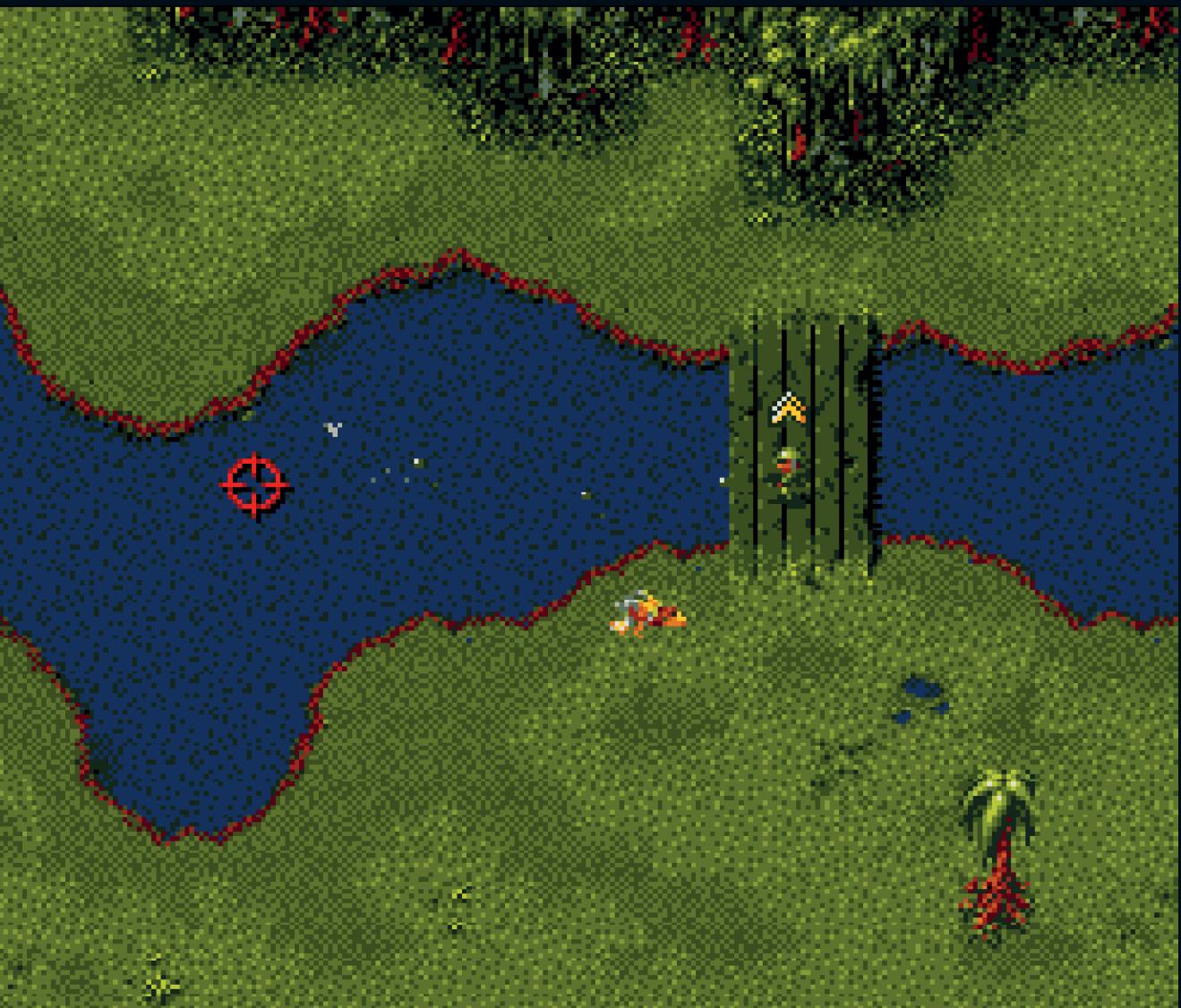
When I first saw *Cannon Fodder* I was oblivious to its anti-war message. I saw cute little soldiers shooting other little soldiers and just had to beg my mum for it! *Cannon Fodder* is a challenging, addictive romp through varying terrain to eliminate the enemy and blow up their buildings, utilising your squad, their guns, grenades and rockets.

The point-and-click control feels right, even if the vehicles can be maddening to drive, more often than not resulting in a mission-ending crash. Each soldier has a name and rises through the ranks after

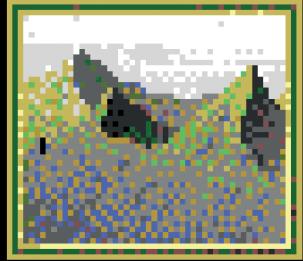
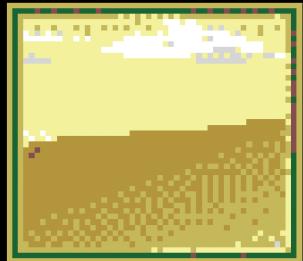
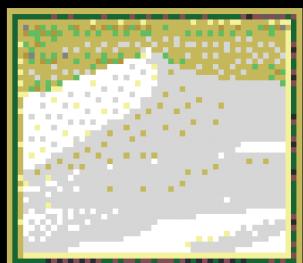
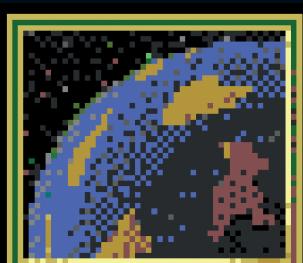
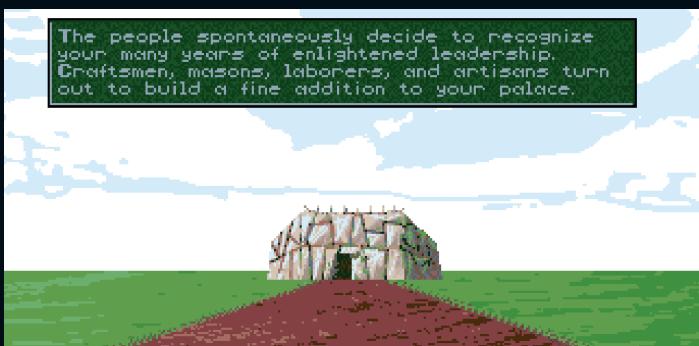
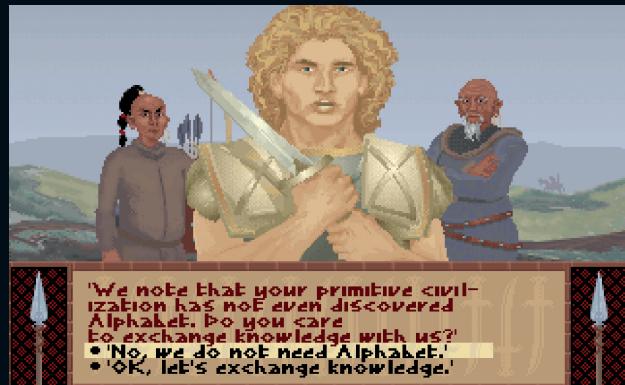
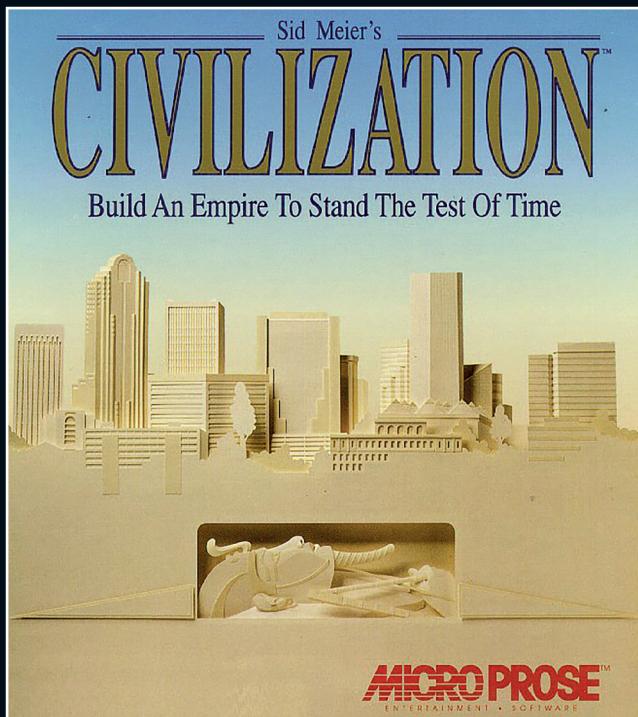
successful missions, which means you get attached to them. The increasing number of headstones in the mission-start screen cemetery shows just how many of these guys you have sent to their deaths. Little violent touches, such as enemies going into convulsions before dying or a lone body floating down the river, are brilliant details.

Despite a nice sequel I would love to see a return of this classic series. What do you do when your entire squad is wiped out? Prep the next one. War has never been so much fun!

Anthony Micari



Name : Civilization
Year : 1991
Publisher : Microprose / MPS Labs



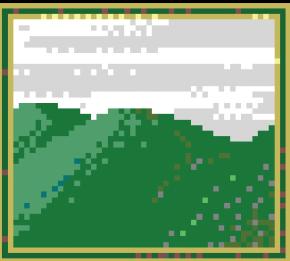
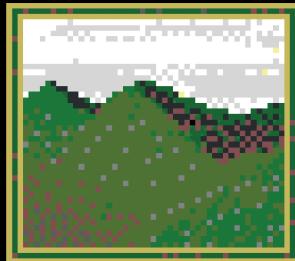
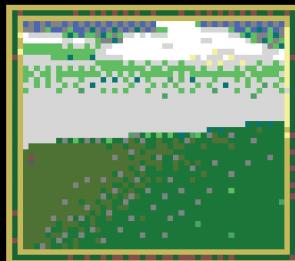
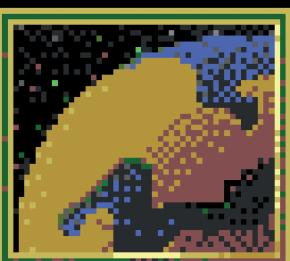
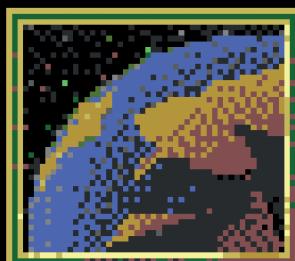
Very few strategy games over the years had such a huge impact as the original *Civilization* (also known as *Sid Meier's Civilization*). It's testament to the success of this game that sequels are still being published to this very day.

In developing *Civilization* Meier decided to give the player complete control over their own destiny. Micromanagement like this had never been seen in a game of this type before and it made the battle for world domination that little bit more satisfying.

However there's a lot more to *Civilization* than warfare. The player takes the role of a nation's leader

and as such is required to master a combination of skills as a diplomat, a politician, an explorer and an inventor. The way each element is exploited is central to the player's success and the way the game progresses.

The timeline is also a great deal more expansive than similar titles. Commencing in 4000 BC, it speeds through the millennia: from the Bronze Age to the Space Age – the timeline is staggering. The only drawback to *Civilization* is the many days lost to playing it!



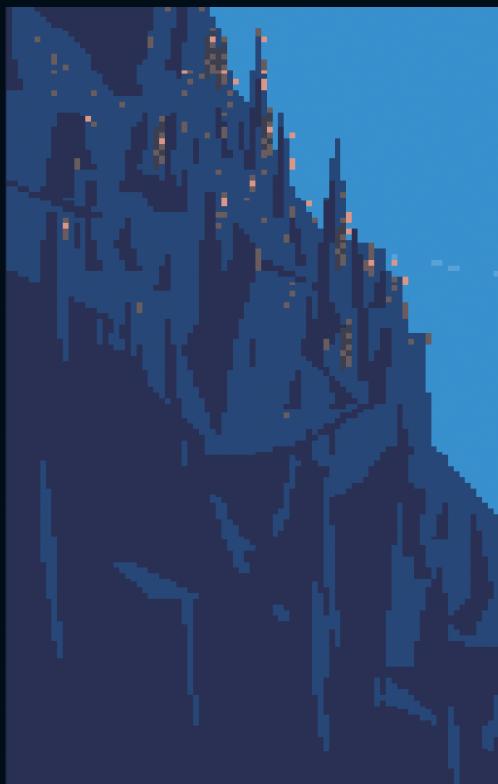
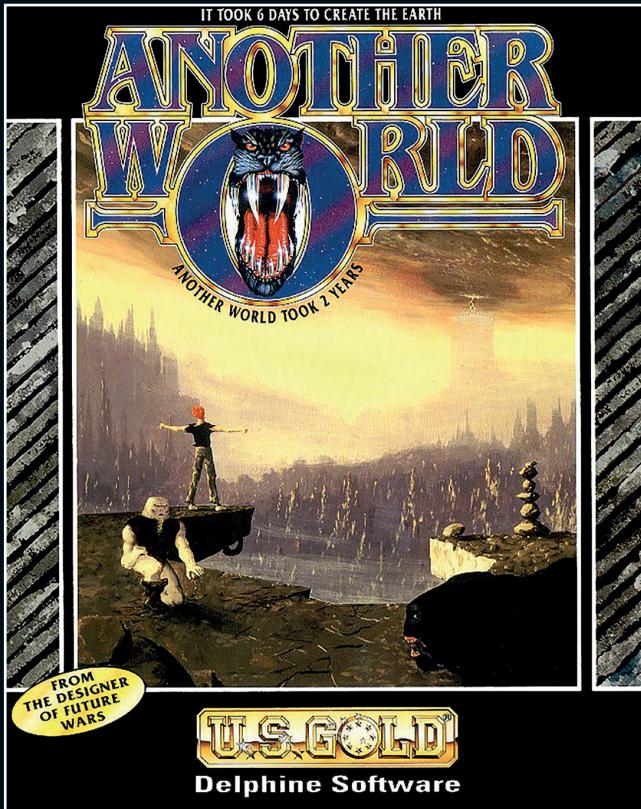
LAND MASS:
Small
Normal
Large

TEMPERATURE:
Cool
Temperate
Warm

CLIMATE:
Arid
Normal
Wet

AGE:
3 billion years
4 billion years
5 billion years

Name : Another World
Year : 1991
Publisher : US Gold / Delphine Software



Eric Chahi's *Another World* (also known as *Out of This World*) was a real game-changer in the world of 16-bit computers. Essentially it's just a flick-screen arcade-adventure, but that simple statement fails to do the game justice.

The stunning visuals are the key to *Another World*'s brilliance. All the game characters and the jaw-dropping scenes are rendered from vector graphics to look as if they are formed from polygons. The pastel colours help set the scene perfectly and the sprite animation is almost faultless.

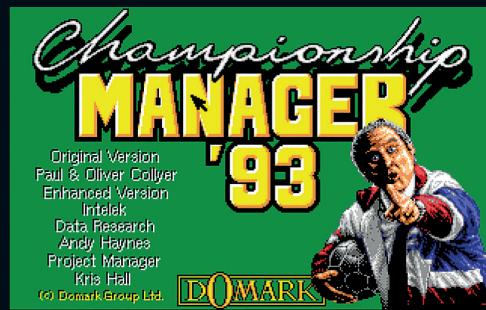
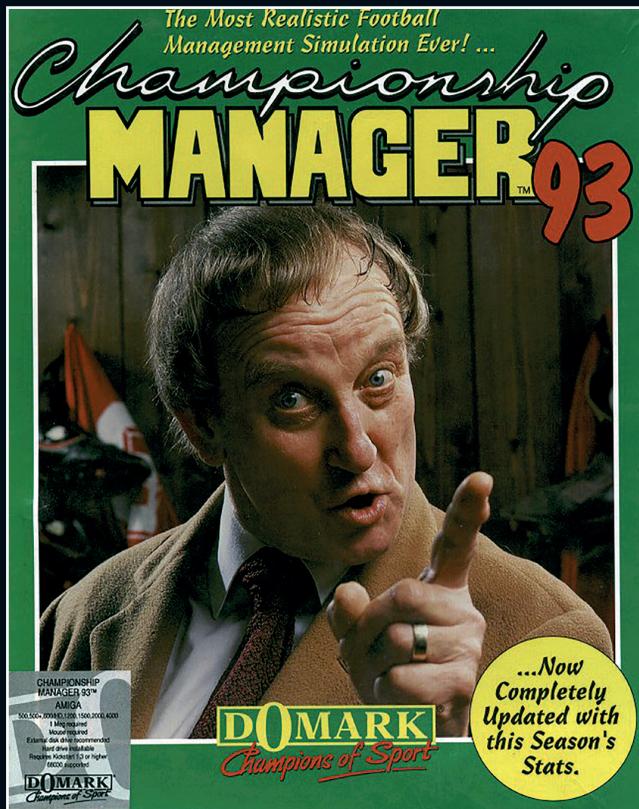
When an experiment conducted by physics

professor Lester goes wrong, he's an alien world. Taking on the role of Lester, the player must do whatever it takes to escape.

This is accomplished through a combination of arcade platform action requiring precise jumping and combat, and puzzle solving that can test the most accomplished gamer. *Another World* isn't a game that can just be played and completed, it's one that you have to learn and experience. The concept was taken even further by the semi-sequel *Flashback*, but the scene was definitely set by *Another World*.



Name : Championship Manager
 Year : 1992
 Publisher : Domark / Sports Interactive



Champions		Transfer News		Season	Ch
Week 3		of Season		Championship Manager	
PLAYER	FROM	TO	FEE		
G.THOMPSON	CARDIFF C	WIMBLEDON	90K		
J.DRYSDALE	NEWCASTLE U	MAN UTD	300K		
P.RAMSEY	SCOTLAND	SUNDERLAND	150K		
P.JEWELL	BRADFORD C	BOLTON W	100K		
D.ALLAN	SCOTLAND	OLDHAM A	60K		
D.PREECE	LUTON T	WATFORD	150K		
T.ELLIS	PRESTON NE	PETERBORO U	30K		
M.CECERE	EXETER C	WIMBLEDON	30K		
M.DEVLIN	STOKE C	BRENTFORD	20K		
N.LYNE	CAMBRIDGE U	PORTSMOUTH	150K		
S.MASSEY	C.PALACE	READING	200K		
G.POOLE	BIRMINGHAM C	BRISTOL C	50K		

anager End Season Reebok ip Manager
 n Championship Manag ip Manager
 anager End Of Season ip Manager

Man Utd 9		Trns	St
I.J	BOOKER T		
	BROWN G		
	CHAMBERLA		
	COMYN M		
	CORNWELL		
	CROSS K		
I.J	DAY C		
	DONAGHY I		
	FOX R		
	GREW T		
	HOPKINS S		
	JONES G		
	JORDAN L		
Q 1	Q 2	Q 3	Q 4
GOAL		DIS	
DOH			

You really can't talk about the best Amiga games without mentioning the *Championship Manager* series. The first game hit the shelves back in 1992 and has seen yearly updates ever since. In 2004 Sports Interactive jumped ship from Eidos, owners of the franchise, over to Sega to continue the game under the *Football Manager* banner, where it still remains the definitive football management game to this day.

While sports management simulations of this type have existed since the rise of home computers

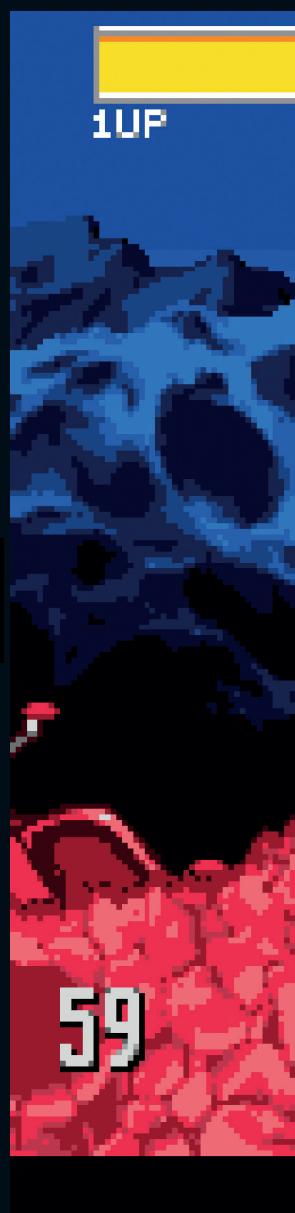
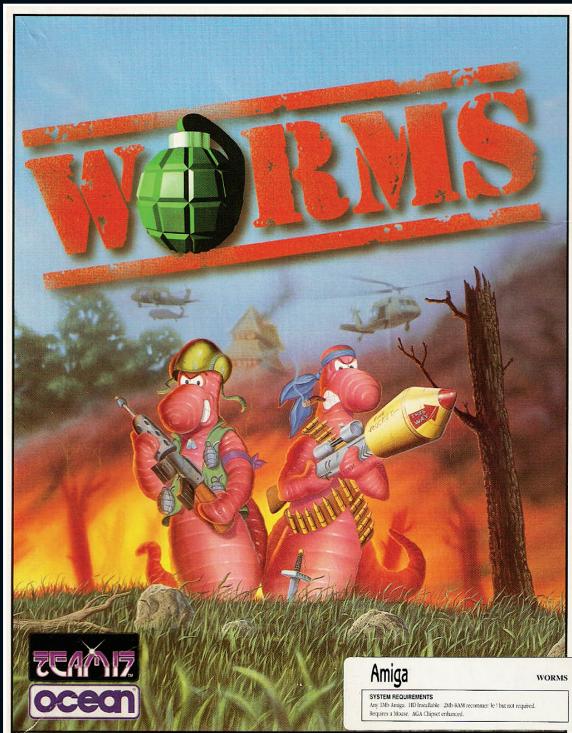
in the early 1980s, *Championship Manager* took the level of realism and turned it up to full heat. Sports Interactive handed you every aspect of club management from hiring and firing staff to stadium expansion and setting up training ground routines. They also added mass appeal with actual matches to watch featuring commentary from well-known pundit Clive Tyldesly. There was no better thrill back then than taking a lowly team from the bottom of the football pyramid to ultimate glory by winning the European Cup!

The screenshot shows the 'Squad' tab selected in the top navigation bar. The table below displays player information across several columns:

	Pos	Name	Pos	Rating
D	C	L VALL	O	DM C
G		MAIL S		MA LC
A	I	MCDONALD I	I	D C
C	C	PATINO P		D C
	MA L	PENDER R		A C
	MA RL	RATCLIFFE E		D L
	D RC	SHERIDAN L		MA L
	M C	STATHAM D		M LC
	DMA C	TANNER G		D R
	D C			
	MA C			
	D C			
	A C			

Below the table are buttons for navigation: PREV, TACT, and OPPS. At the bottom, there are tabs for DEFs, MIDS, and ATTS.

Name : Worms
Year : 1993
Publisher : Team 17



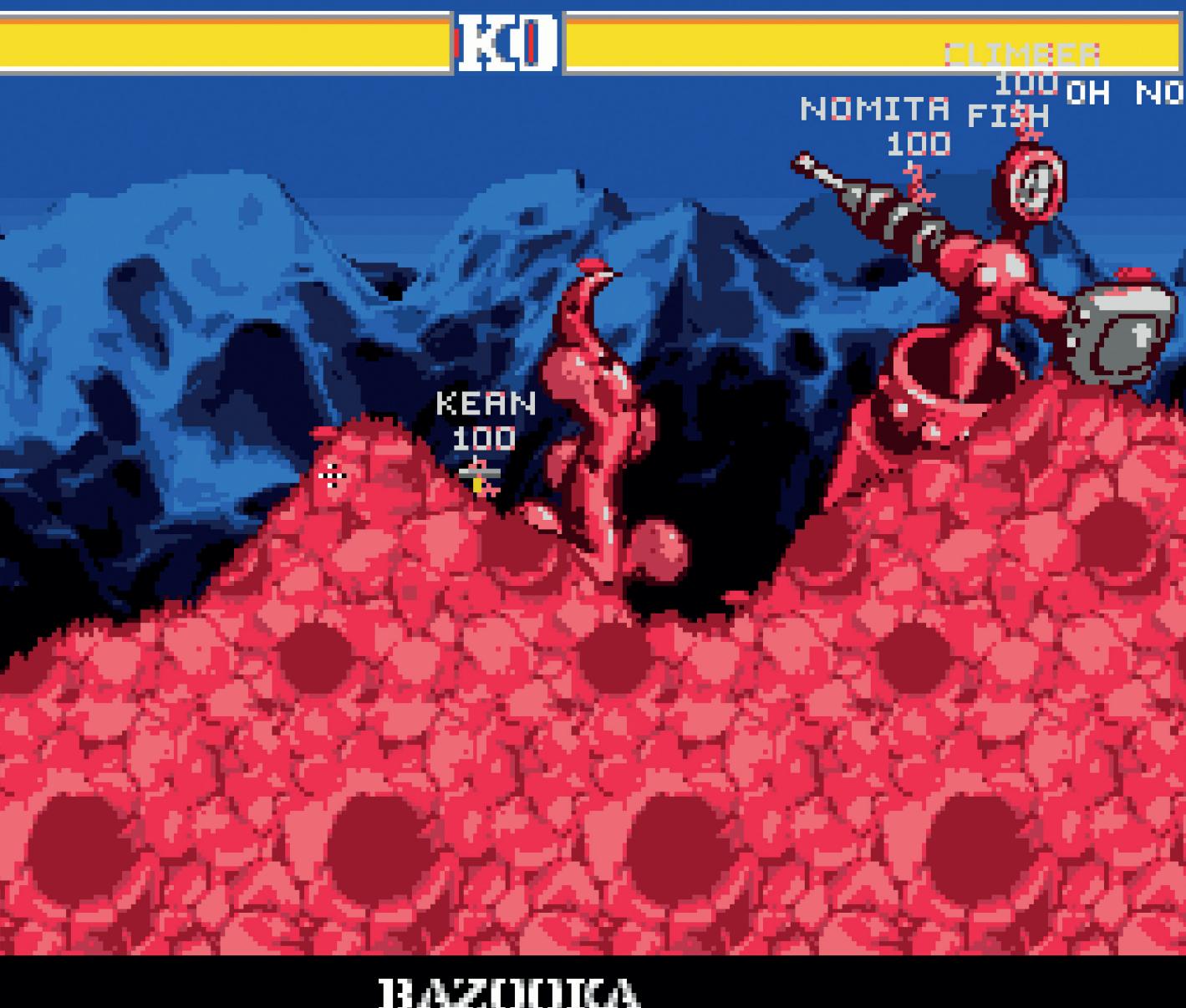
DIGGER
IS AN
EX-WORM

Worms is without doubt the game that put Team 17 on the map and its popularity was so huge that the franchise is still going to this very day. This is a strategy war game with a big dollop of comedy that looks a bit like *Lemmings*, with its little sprites and detailed backgrounds, but plays very differently.

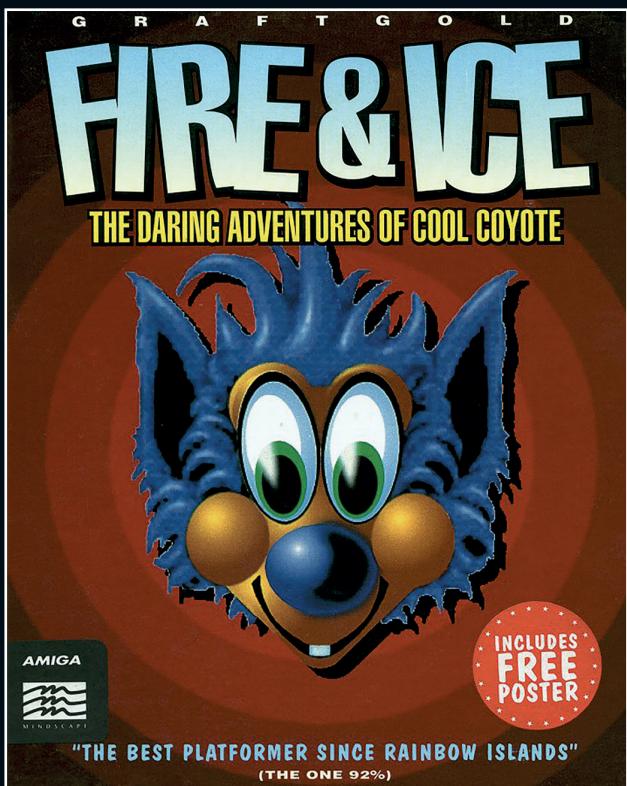
You take control of a team of four worms facing up to three other teams, which can either be human- or computer-controlled. At your disposal

are a number of weapons (all of which have different effects on your opponent) and a series of useful tools that can be used to manipulate the environment around you.

Games are played across a series of randomly generated levels each following a different theme with its own traits affecting the way the game is played. *Worms* is a true classic in every sense and it never bores.



Name : Fire & Ice
Year : 1992
Publisher : Renegade / Graftgold



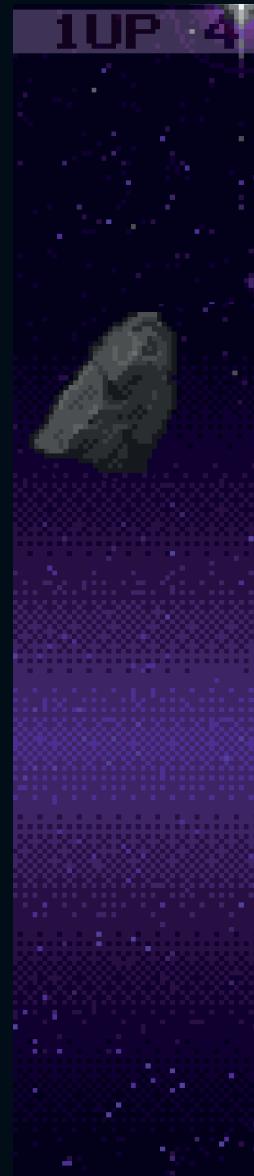
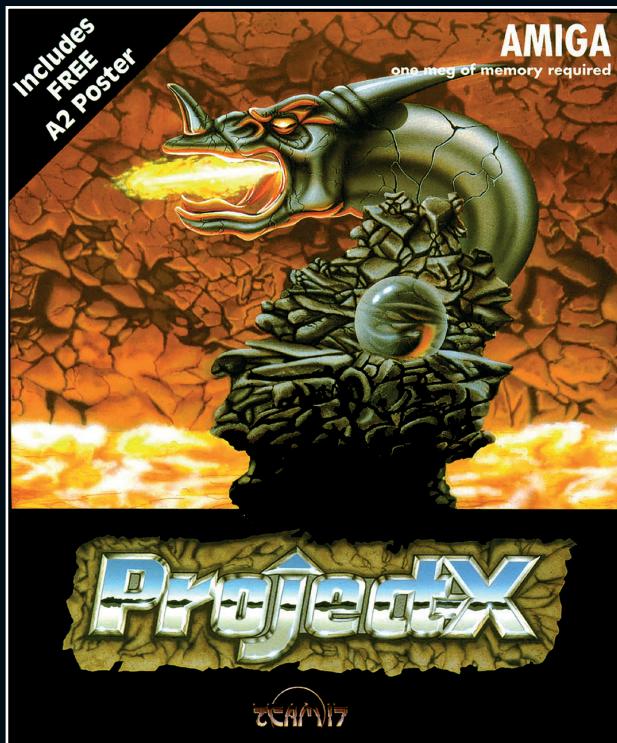
In the quest to create a *Sonic* for the Amiga very few attempts really held up, but without any doubt one of the best was Graftgold's *Fire & Ice*, a stunningly beautiful platformer starring a similarly blue fellow called Cool Coyote. Steve Turner's team had previous stirring form in the area of platformers, having given us the excellent Amiga port of *Rainbow Islands*, so the quality of this title was no surprise.

A feature of *Fire & Ice* that sets it apart from its competition is the map showing the current world visible at the bottom of the screen. Another unique feature is the way you have to freeze enemies with an icy projectile before you can kill them.

Fire & Ice is widely regarded as one of the best Amiga platformers (and best looking) of all-time and the review scores of the day reflect that too.



Name : Project-X
Year : 1992
Publisher : Team 17

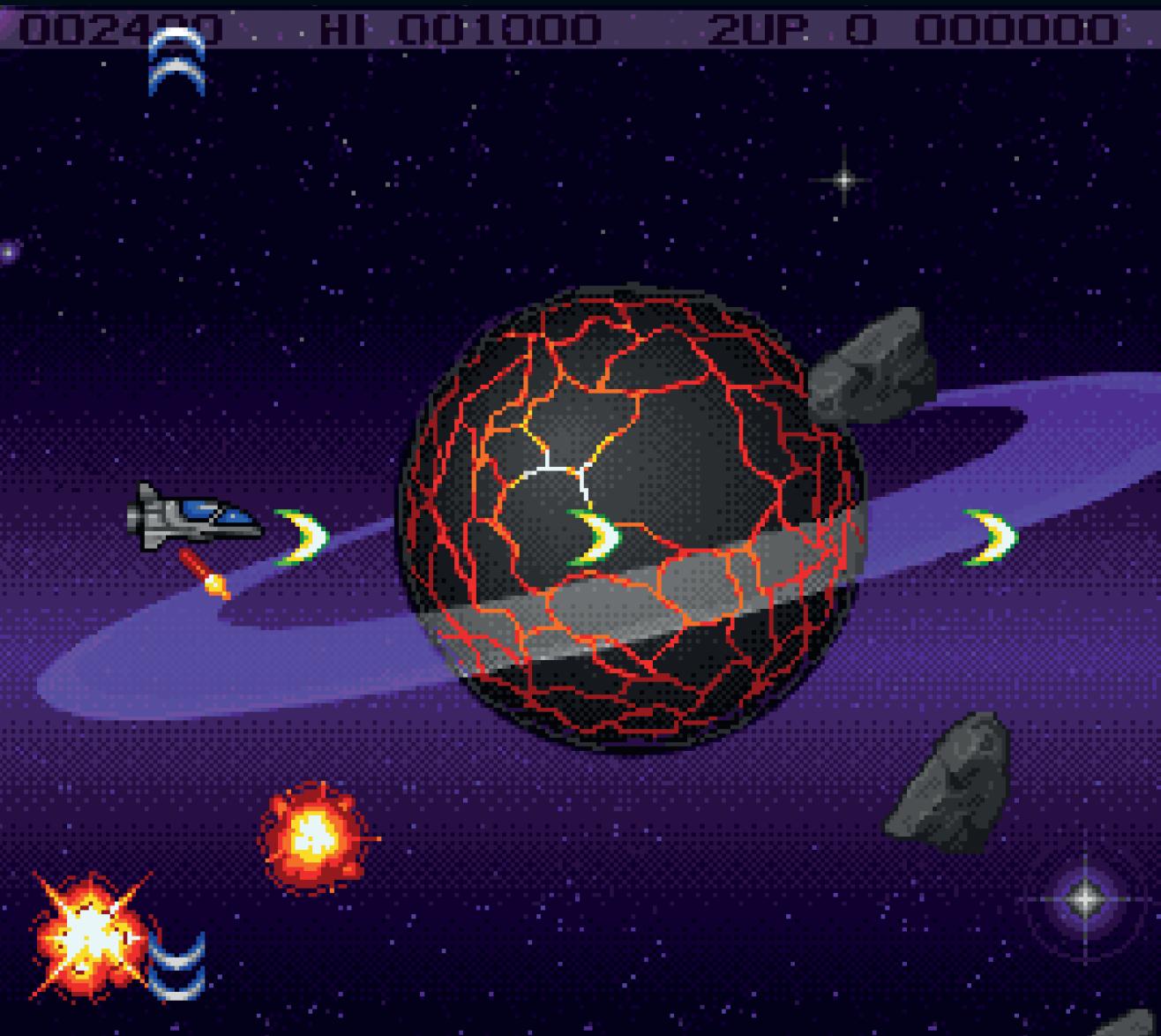


The plot takes place in a future colonised universe where military scientists have disposed of all the defective military droids on the lonely uncolonised planet Ryxx. The surviving droids eventually become sentient (à la Skynet) and vow vengeance on humans. They occupy a former station where they create war machines.

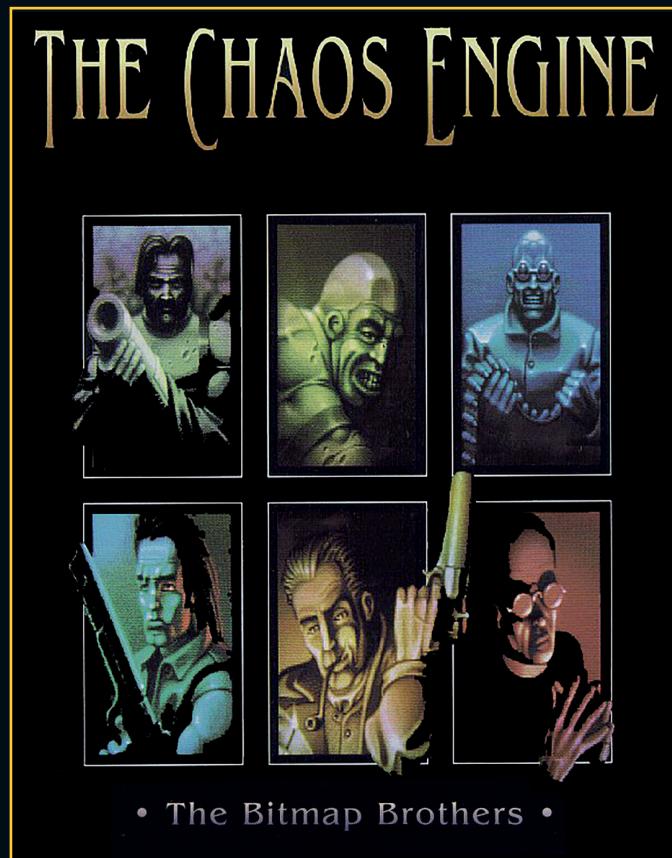
The mission: journey to this world, initiate Project-X and eliminate the droid forces. The plot is probably more original than the game, but don't

let that put you off, because while *Project-X* does nothing new it does everything very well.

Nothing more than a scrolling shoot 'em up over five levels in the vein of *Gradius* and *Darius*, it's among the best of this genre for the Amiga. The graphics are beautiful, the power-up system works extremely well and the digitised sound adds to the experience. For the many who found the levels too hard, Team 17 released *Project-X SE*, with the difficulty level lowered.



Name : The Chaos Engine
Year : 1993
Publisher : Renegade / The Bitmap Brothers



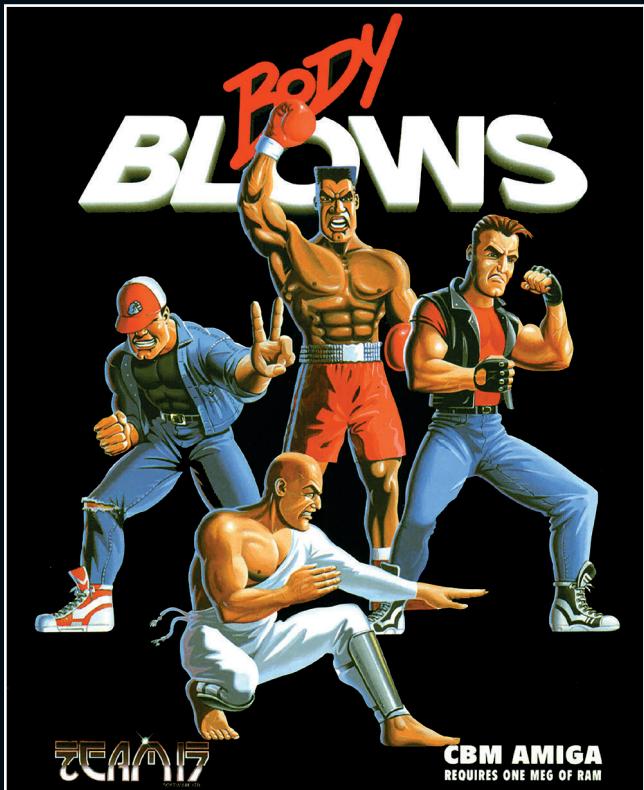
When it comes to pushing boundaries on the Amiga, few did a better job than The Bitmap Brothers. *The Chaos Engine* is yet another great example of that. Retaining their trademark graphics style, this game put it to better use than ever by employing a steampunk-themed environment.

Set in Victorian times, *The Chaos Engine* is a top-down run-and-gun game populated by a wide selection of characters who interact with their world in a variety of ways. They team up in twos,

either group computer-controlled or by a second player. This rowdy mob comprise Navvie and Thug, Brigand and Mercenary, and Gentleman and Preacher (also a scientist). Each team has its own unique advantages and drawbacks. There are enemies aplenty and on every level power-ups, gold and keys to pass through puzzles and mazes, as well as keys to open doors. *The Chaos Engine* is a true Amiga classic.



Name : Body Blows
Year : 1993
Publisher : Team 17

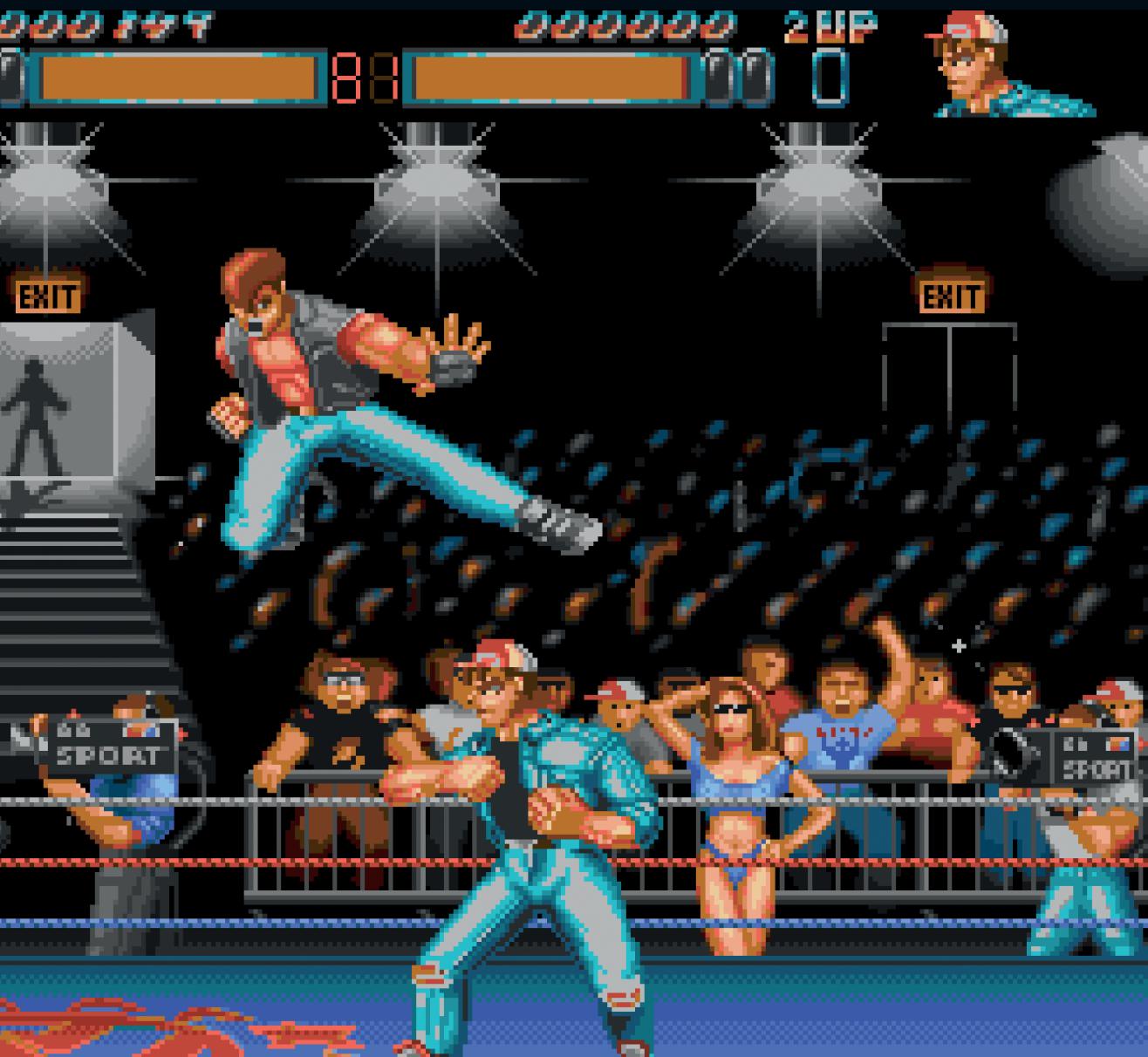


One area where the Amiga really struggled to compete with consoles was in the genre of one-on-one fighters. In 1993 Team 17 tried to fix that with the release of *Body Blows*, a pretty blatant clone of Capcom's *Street Fighter II*.

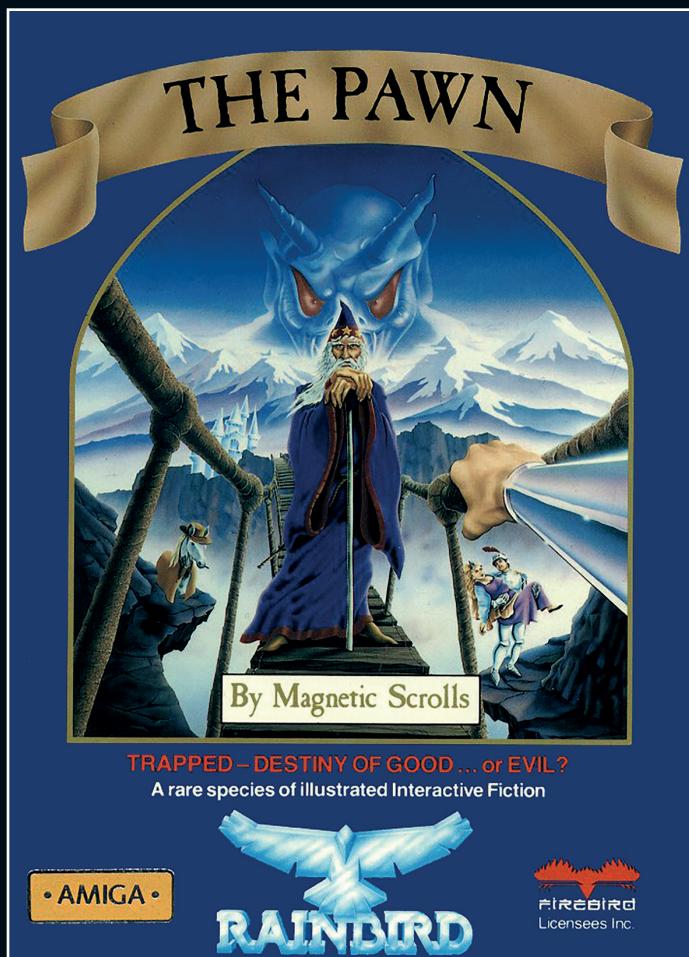
The game features eleven fighters, of which four are selectable and the rest act as opponents. In two-player mode each player can fight the other after choosing a character, and Tournament mode lets

four or eight players battle against each other. Two fighters are clear copies of *SFII*'s Ken and Ryu.

While the game did suffer from the constraints of using a one-button joystick, the press received it well. *CU Amiga* gave it 91% as the best game of its type on the Amiga and *The One* actually thought it was even better than *Street Fighter II*, awarding it 92%. Mature reflection suggests it didn't deserve those accolades, but it's still a quality fighting game.



Name : The Pawn
 Year : 1985
 Publisher : Rainbird / Magnetic Scrolls



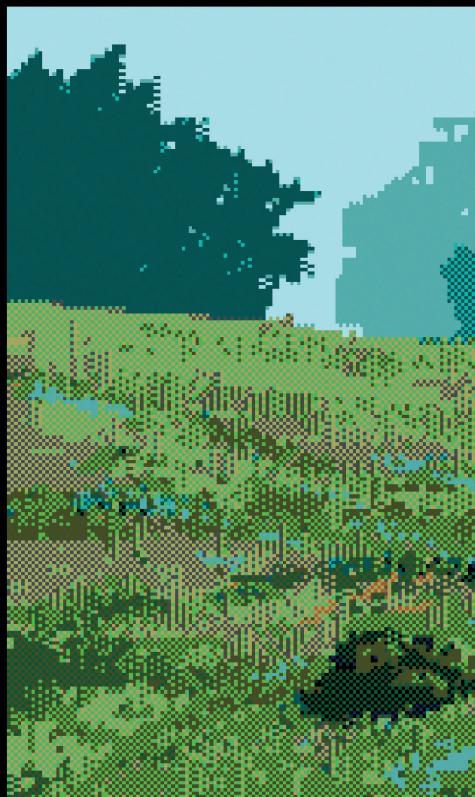
SCRUB



Files Scrub Text Graphics Options Goodies
 northeast and east; there is actually some grass growing here amongst the tangled undergrowth! Southwest leads into a wood, southward to a copse and southeastward to a field of golden wheat. Westward takes you onto the side of a hill which rises up above the scrub and to the north is the moat of a homely castle and its drawbridge.
 >

ON THE PATH 0/1
 Files Text Specials Goodies
 The Pawn - Copyright (c) 1985,1986 Magnetic Scrolls Ltd.
 Version 2.2
 You wake up on a sunny August morning with birds singing, and the air fresh and clear. However, your joints are stiff and you have not woken up in your bedroom as you would have expected. Trying to recall what happened the night before, you manage to piece together a few brief glimpses to give the following account.
 You were walking home, having just done your week's shopping at the supermarket, when you noticed a stranger in a white overcoat coming towards you. When he got very close you noticed that he was wearing glasses and had a thick, bushy beard. As he passed you he let out a hollow, cackling laugh and you felt a sharp blow on the back of your head. Then you woke up.
 You now notice that you are wearing a silver wristband which covers your forearm.
 On The Path
 You are on a gravel path leading north to two snow capped mountains. To the west is a dying forest. Eastward is a vast, grassy plain and the path also continues southward.

GRASSY FIELD



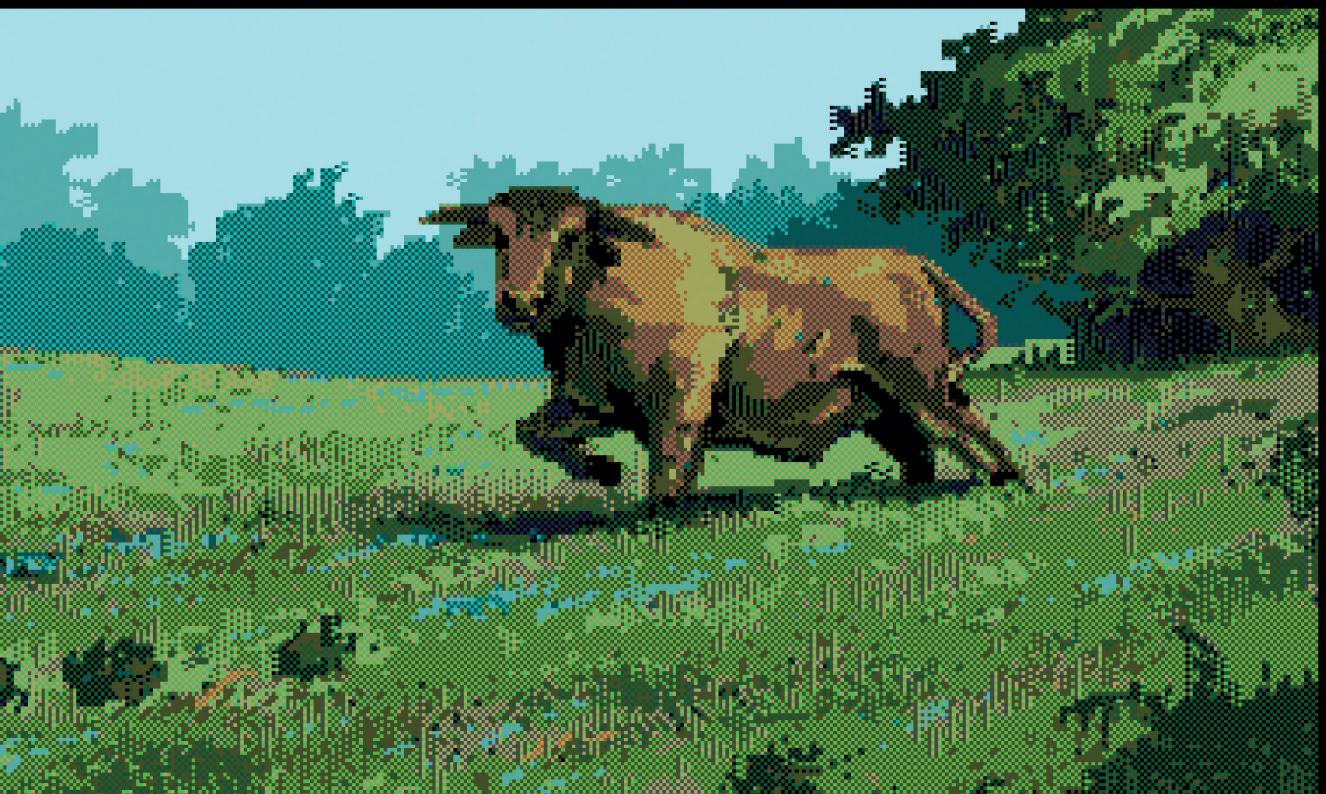
Files Grass
 Knee-deep in absurdly you potter aimlessly at the dense wood which 1 country lane to the we munches on a cornf lower
 >

Text adventures – an 8-bit staple for years – were the type of game that convinced people to purchase a home micro over a more games-orientated console. But with the arrival of 16-bit machines they were largely forgotten in favour of hard-hitting arcade games.

The Pawn managed to change 16-bit attitudes, impressing with its visuals as well as in its depth and interface. Developers Magnetic Scrolls created

a whole new parser that made entering complex phrases and sentences much easier. Set in the fantasy world of Kerovnia, *The Pawn* parodies the whole genre of interactive fiction to great effect. The stunning scenes and amazing digitised sound help to make *The Pawn* far more immersive than any other text adventure before it and it became the game by which all others from that day forward were judged.

5/148



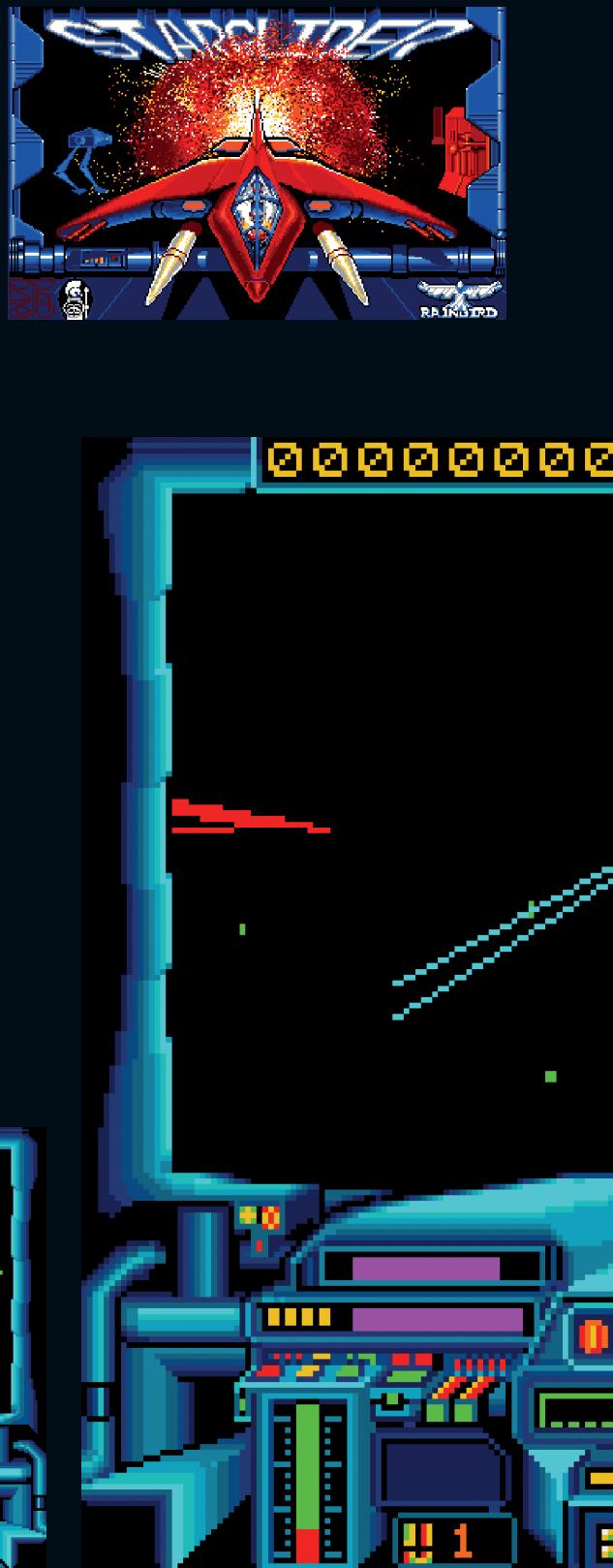
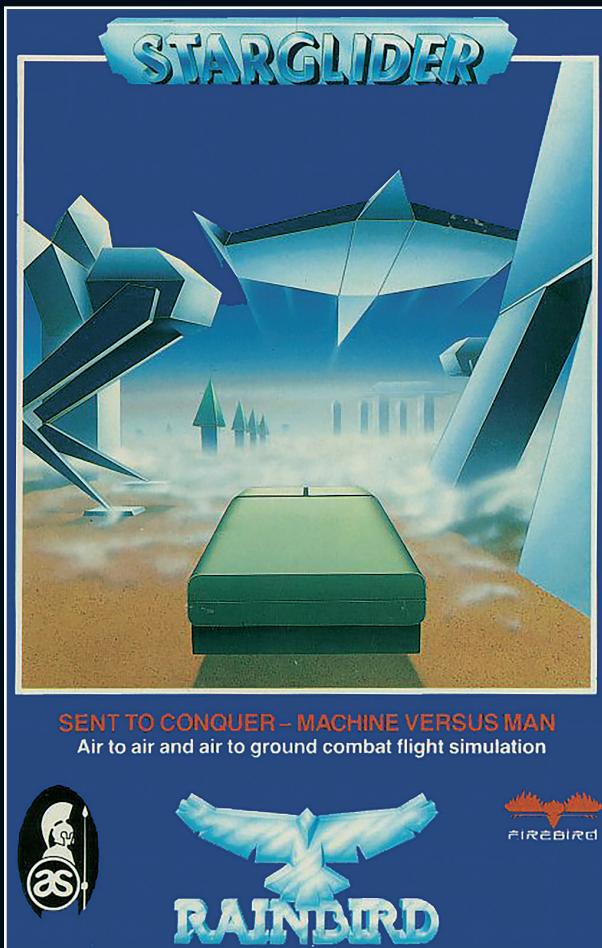
Text

Graphics

Goodies

lush grass, your eyes dazzled by bright blue cornflowers, round this rich pasture, wondering whether to investigate lies to the south, the orchard (southeast of here) or the west. In a corner of the field a bull greedily slurps and r.

Name : Starglider
Year : 1986
Publisher : Rainbird / Argonaut



Starglider is without doubt one of the true pioneers of 16-bit video games and a title that persuaded an awful lot of people to make the upgrade.

Designed and programmed by Jez San, who was inspired by Atari's *Star Wars* arcade game, it's particularly notable for its use of smooth wireframe 3D graphics. Essentially *Starglider* is a space combat simulator in which you're battling to rid the universe of the mechanised invaders. Another

feature of *Starglider* is the great digitised music by Dave 'Uncle Art' Lowe, which included a fifteen-second vocal track. All the music from *Starglider* was included on Dave Lowe's 2016 studio album *A Temporal Shift*. This isn't where the features ended either, as Rainbird also commissioned a novel by James Follett that went into the whole backstory and plot behind the game. *Starglider* was followed by an even more impressive sequel with filled 3D graphics just two years later.



Name : Turrican II
Year : 1991
Publisher : Rainbow Arts / Factor 5

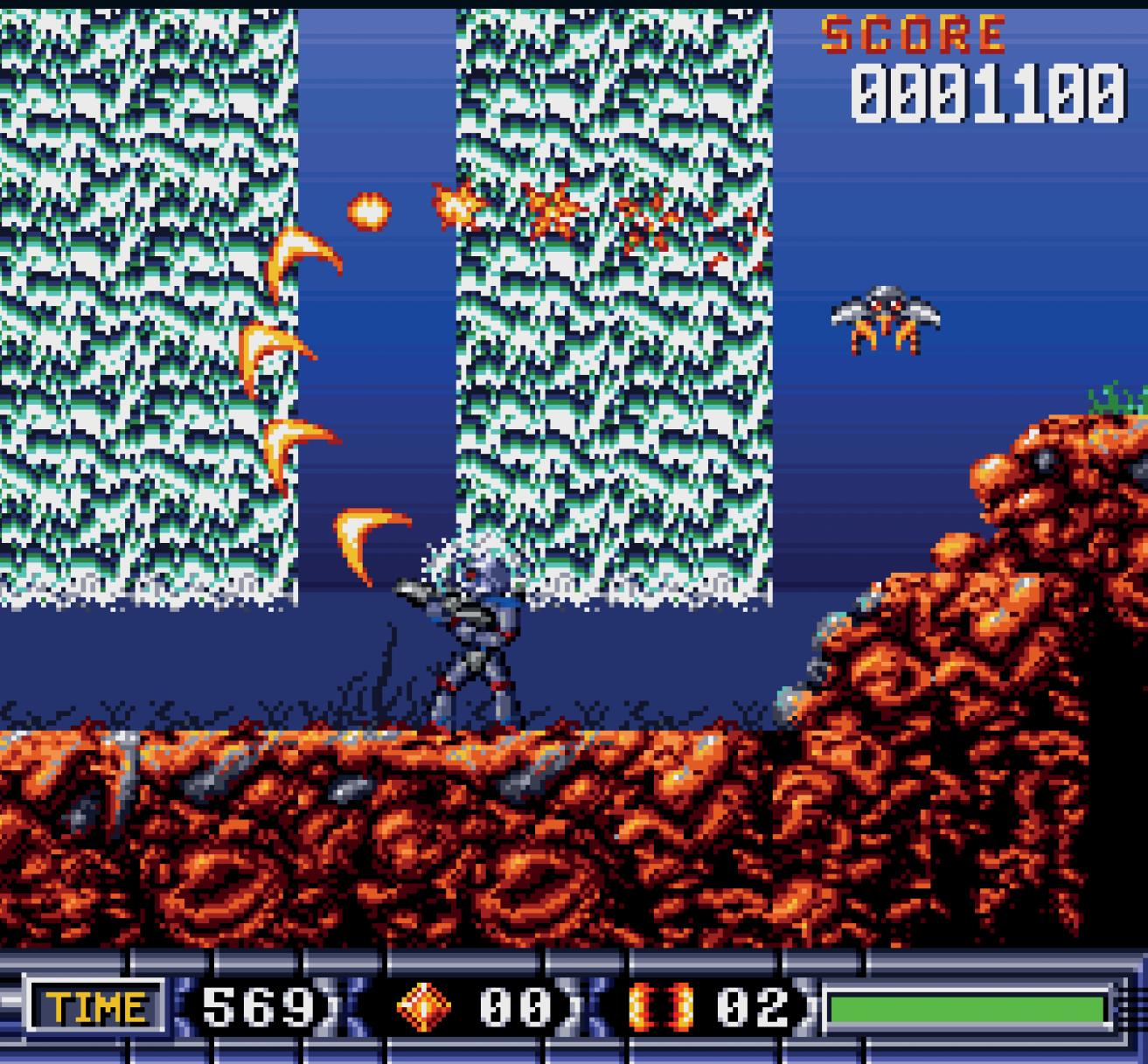


While the original *Turrican* is probably most famous as a Commodore 64 game, this terrific sequel is definitely an Amiga game through and through. It plays very much like the first outing – a mix of platformer, adventure and shooting, and with some great driving music tracks by Chris Hülsbeck.

There are three primary weapons at your disposal in *Turrican II: The Final Fight*, each with its advantages: bounce, laser, multiple shot beam and a

'laser wall' which sweeps out either side. In addition holding down the fire button unleashes a steerable laser beam, but it prevents movement while in use. Collect power-ups to upgrade standard weapons, including shields offering brief invulnerability.

One memorable aspect of *Turrican II* is the way you can transform. A press of the space bar turns you into an indestructible ball and some stages even see you morph into a spacecraft.



Name : Lionheart

Year : 1992

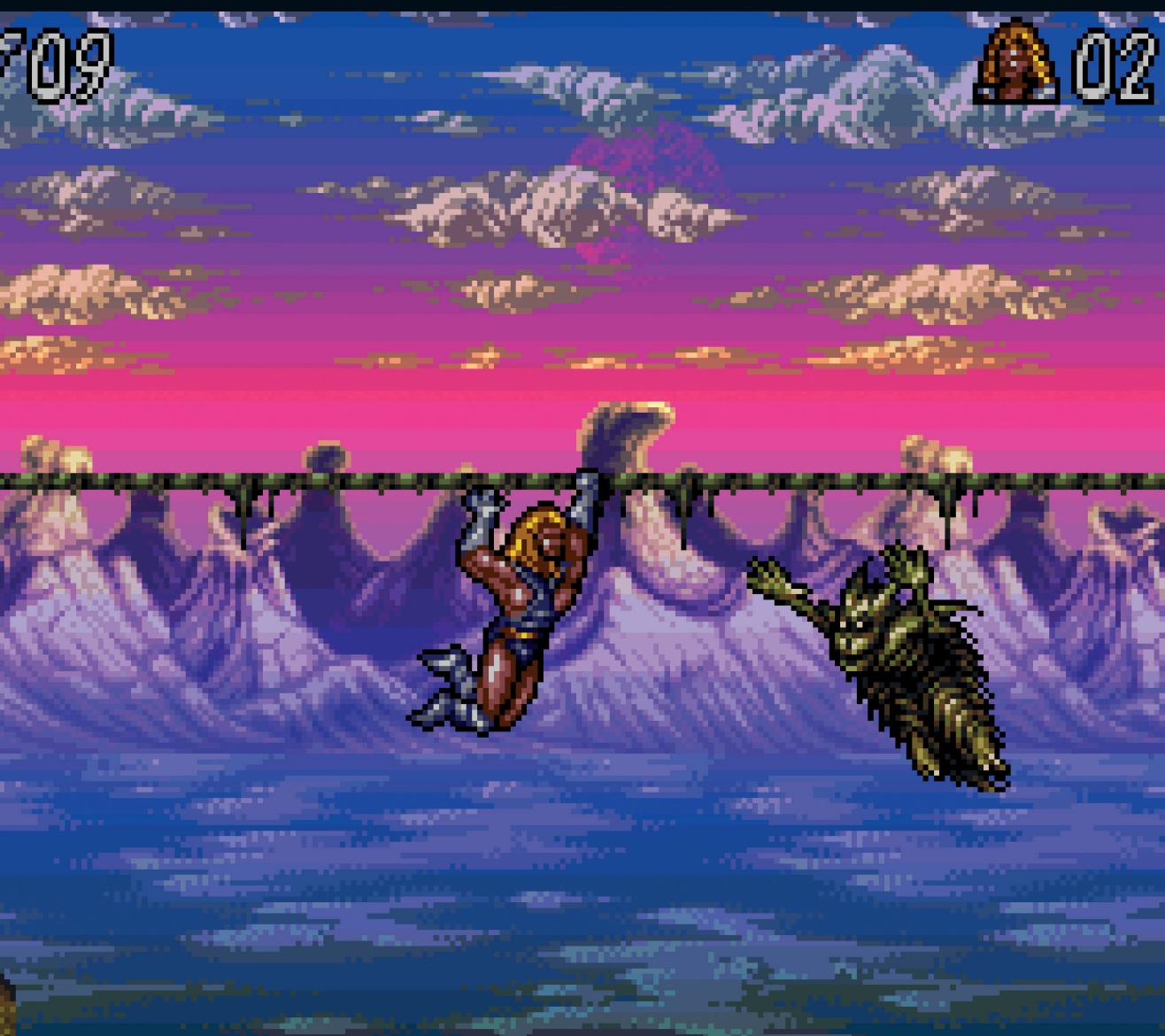
Publisher : Thalion



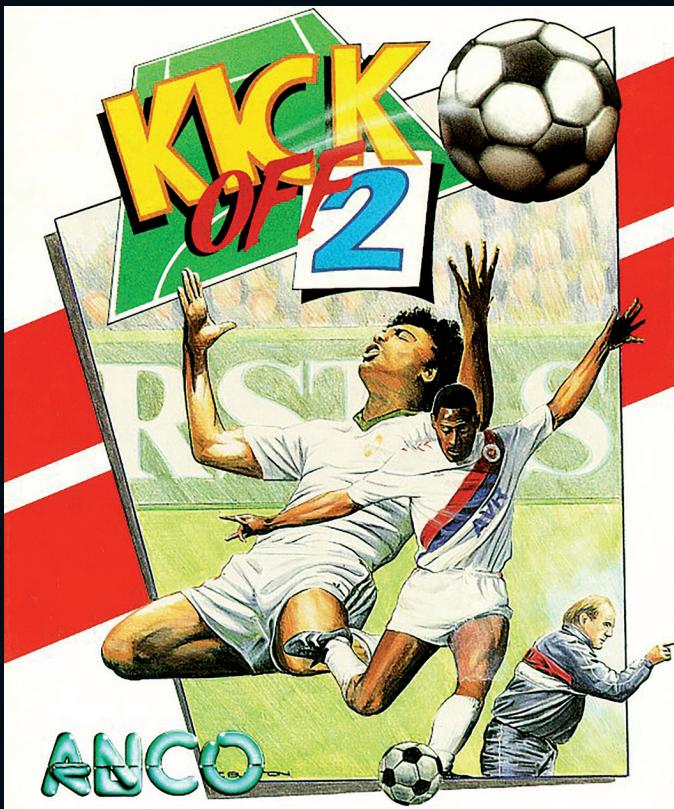
For Thalion *Lionheart* is unusual in that it was released exclusively for the Amiga – it was designed specifically to take advantage of the Amiga's advanced graphical capabilities. It's a beautiful platform game with a fantasy theme. The mission is for Valdyn the Lionheart to save the Cat People from an evil warlord who covets their land.

When *Lionheart* was released it was described as setting new standards for Amiga platform games and it's easy to see why: the visuals here

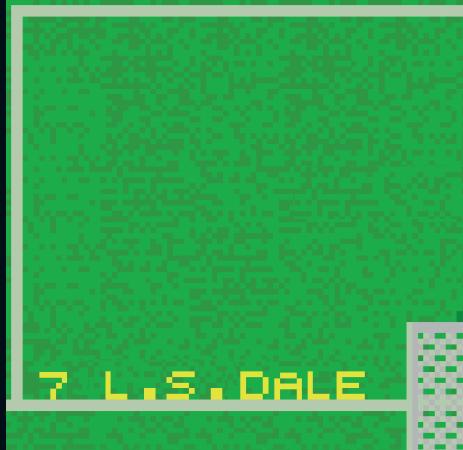
are truly stunning. Valdyn went on to make an appearance in another Thalion title, the impressive RPG *Ambermoon*. *Lionheart* features three difficulty levels, something commonly found in console games of the time. As an added incentive, the highest difficulty not only features stronger opponents, but also differently designed environments that offer an additional gameplay experience. There are few Amiga games that impress more than *Lionheart*.



Name : Kick Off 2
 Year : 1989
 Publisher : Anco / Dino Dini



OPTIONS				
PITCH	NORMAL	HET	SOGGY	PLASTIC
DURATION	2 X 3	2 X 5	2 X 19	2 X 29
WIND	OFF	LIGHT	MEDIUM	STRONG
EXTRA TIME	NO		YES	
AFTER TOUCH	NO		YES	
LEAGUE SKILL	INTERNATIONAL	DIV. 1	DIV. 3	
GAME SPEED	NORMAL	50 %	25 %	
SKILL LEVEL	TEAM A		TEAM B	
SELECT TACTICS	TEAM A		TEAM B	
REFEREE	RANDOM	R.J. FERNANDEZ		
DONE				



When Anco published *Kick Off* in 1989 the game revolutionised the world of football sims. Designed by legendary Dino Dini it offered a new level of realism in simulations of the beautiful game. But as good as *Kick Off* was, it was the sequel that became the best remembered of the series.

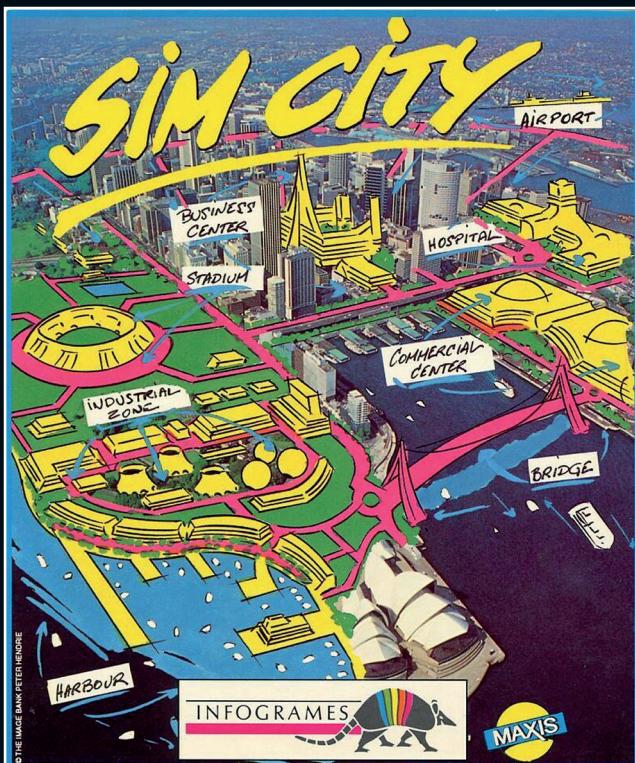
Kick Off 2 took things to a new level by adding features such as a full multi-directional scrolling pitch with everything in perfect proportion, much more advanced player AI, more options including

various tournaments, and even the ability to add in football management style features with the addition of the *Player Manager* add-on pack. Combine this with the existing award winning features such as after touch, realistic dribbling and ball control, action replays, referees and individual player characteristics.

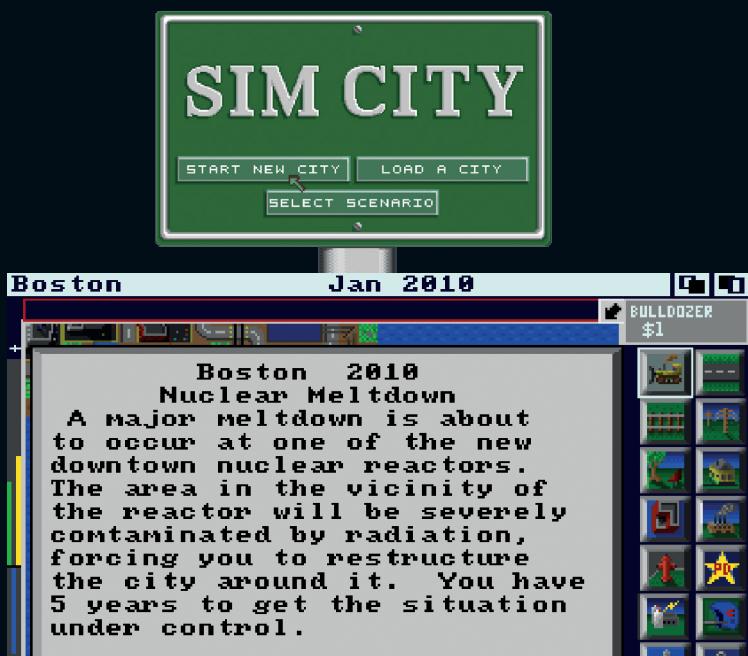
For many gamers, when it comes to football games, *Kick Off 2* has never been bettered. It remains world champion.



Name : Sim City
 Year : 1989
 Publisher : Maxis Software



Kenilworth
Major earthquake



The story goes that while designer Will Wright was developing *Raid on Bungeling Bay* for Broderbund he found that he was having more fun with the level editor than the actual game itself. This inspired him to create a game in which players could develop their own worlds.

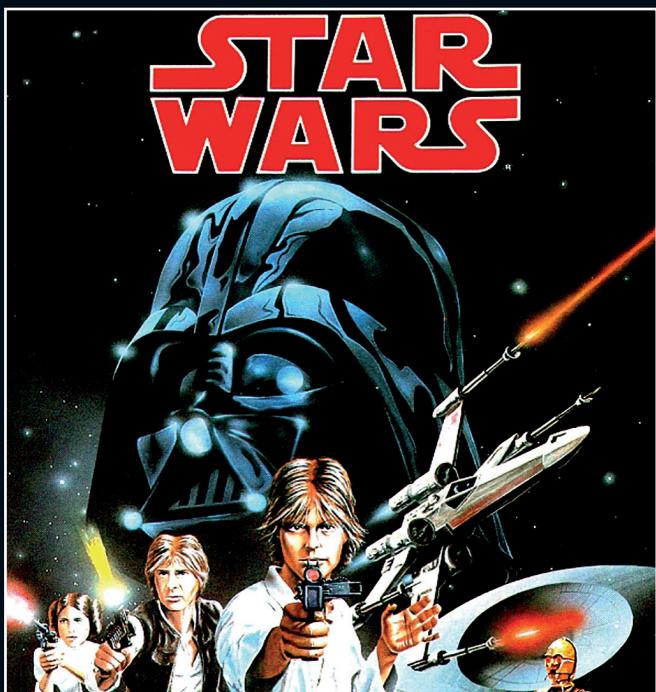
That title would become *Sim City*, a game that revolutionised strategy games and created a whole new genre within it. What made *Sim City* a ground breaker was its lack of a final goal – you could

neither win nor lose. Consequently, for many years no software house wanted to publish it, certain that game players wouldn't be interested without coins and power-ups to collect, baddies to destroy and arcade skills to flaunt, but how wrong they were!

The developers did later add some goals but they were just a diversion from the real point of simply building and managing a city down to the finest detail. *Sim City*'s legacy is clear to see, as the series is every bit as loved today as it ever was.



Name : Star Wars
Year : 1988
Publisher : Domark / Vektor Grafix



The three Atari coin-op versions based on the original *Star Wars* trilogy are perhaps the best known and most popular games coming from the Lucas Films' franchise. They arrived in the arcades in 1983 in stand-up and sit-down cockpit cabinets, the latter regarded by many as one of the best arcade experiences of all time.

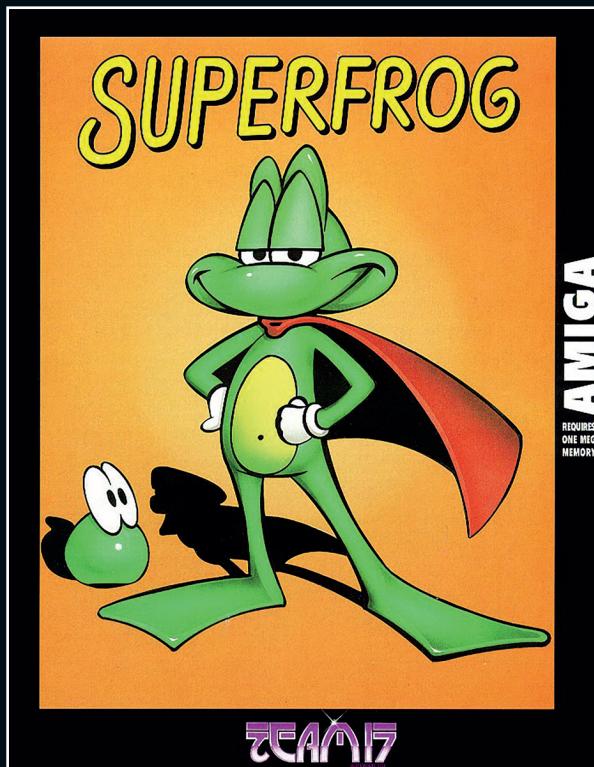
It took five years for Domark to pick up the licence for home computers, including the Amiga, and proved it was worth the wait. With fluid vector

graphics, digitised speech and thrilling gameplay that recreated the key battles from the original film, it's rightly held in high regard.

The trench sequence and ultimate destruction of the Death Star remains one of the most memorable and copied segments of any video game ever. This Commodore Amiga conversion is pretty much arcade-perfect in every single way even down to the cries of 'Use the force, Luke'.



Name : Superfrog
Year : 1993
Publisher : Team 17



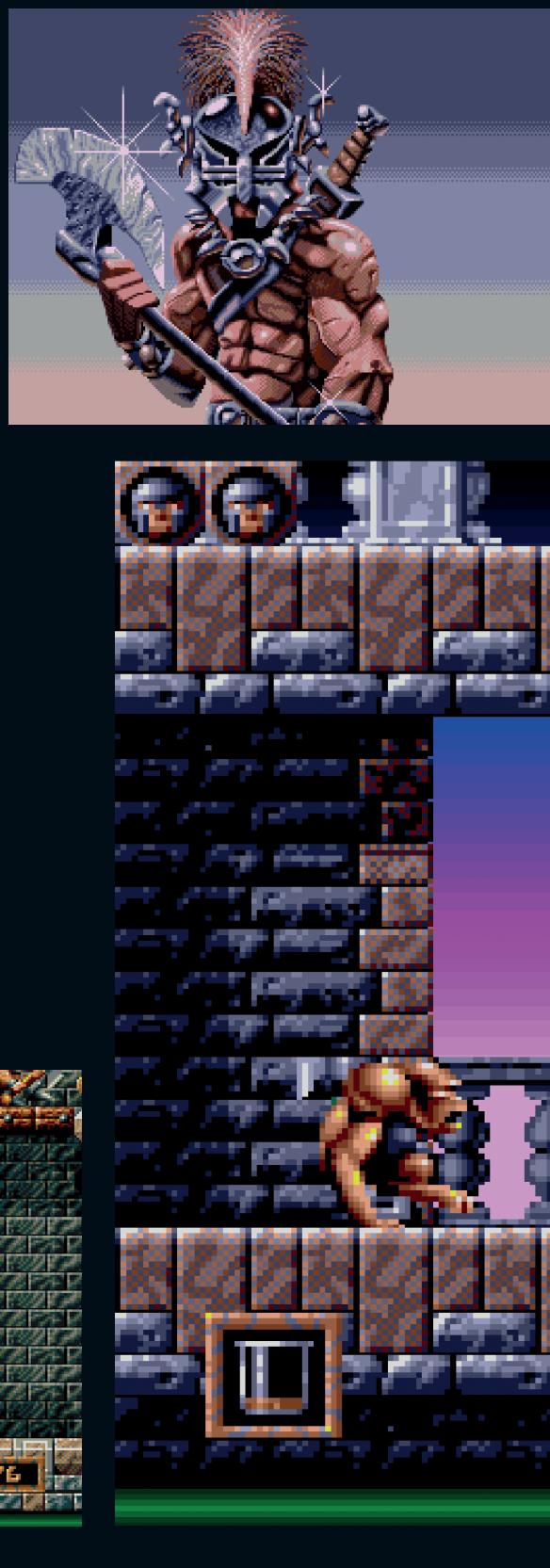
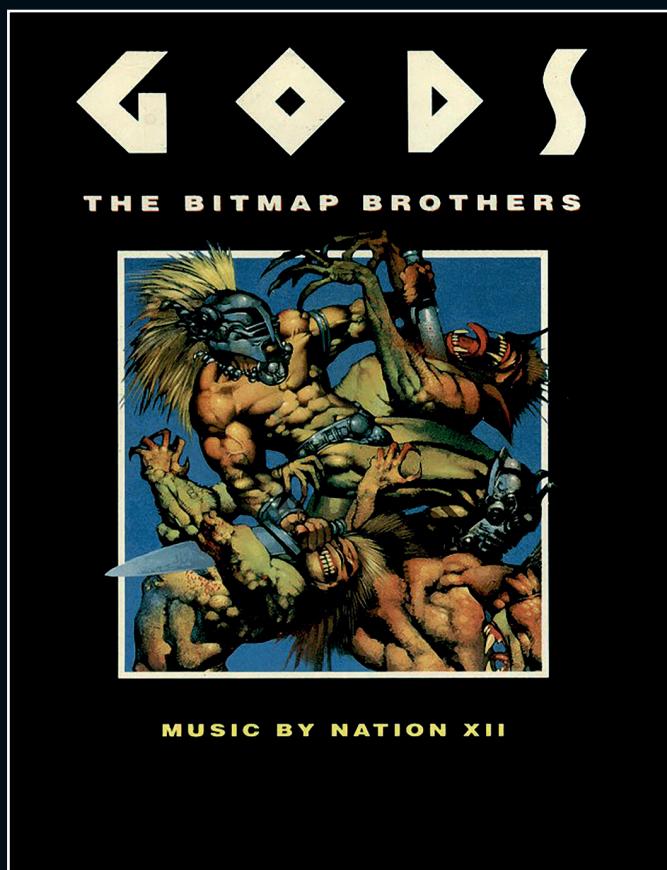
Sonic, Crash Bandicoot, Mario, Dizzy... in the 1990s every software developer wanted an instantly recognisable platform character of their own. Leading Amiga software house Team 17 had a go too. *Superfrog* is one of the more memorable efforts, sufficiently successful for Team 17 to revive the game in 2013 as *Superfrog HD*. The plot pays homage to the Frog Prince fairytale with Superfrog on a mission to return himself to human form.

The twenty-four levels are split into six differently themed worlds, with a very clever bonus level that parodies another Team 17 game – *Project-X*. As with many similar titles the player collects coins along the way and can then either gamble with them in a fruit machine mini-game, or bank them for extra points.

Superfrog represents an engaging classic console-style experience on the Amiga.



Name : Gods
Year : 1991
Publisher : Renegade / The Bitmap Brothers



In *Gods*, another quality product from the successful Bitmap Brothers, the player takes on the task of helping the mythical Greek hero Hercules to complete the quest set him by the gods to achieve immortality.

While *Gods* is a pretty standard arcade-adventure in style involving precise and timed jumping, running around to solve puzzles, finding items and defeating enemies, it is remarkable in several ways, most notably perhaps in the enemies' Artificial Intelligence. Not only does it adjust to your playing

skill, it will even help to improve situations if you're really struggling to make headway. Another unusual feature is the ability to upgrade and improve weapons, which puts more focus on the game's fighting aspect.

Once again the Bitmaps used their contacts in the music industry to add a wonderful music soundtrack and anyone who has played *Gods* will always remember 'Into the Wonderful' by Nation IX. All of the six major Amiga magazines of the day awarded *Gods* at least 90% or over and it's easy to see why!



Shoot 'Em Up
Construction Kit
— Oliver Frey





THE MEMOIRS



Glenn Corps

Having proved he could draw a piece of wood, Glenn was present at the very start of games software developer Bullfrog and contributed to many of its pivotal Commodore Amiga titles, not least being *Populous*.



I saw my first computer shortly after starting sixth form in September 1980. I had vague thoughts of being a draftsman but that was because technical drawing was my only A-grade O-Level. I was supposed to be studying maths and geology but the school had a couple of Commodore Pets in a room off one of the physics labs that proved to be a bit of a distraction from school.

I spent all of my free periods playing with the things. Then I bought a ZX81 and I remember buying an assembler and disassembler for £5 each at a ZX Microfair. I got half of that money back by selling copies of both to the head of the geography department.

NEOchrome, the bitmap graphics editor for the Atari ST written by Dave Staugas, who also co-authored the ST's operating system.

The school's curriculum didn't yet include computer studies, so I learned from books and magazines. Even so I focused on A-Levels, but ended up with a D, two Es and an F and decided there was no point going to university. I'd be in a better position after three years of work.

I failed to get a coding job and ended up as a computer operator working on mainframes (including a Cray 1 which was kind of cool) for four years before taking a pay cut to work as a programmer for a company making high end Telex machines. I was made redundant a year later but by then I had learned C and had an Atari ST (the Amiga 1000 was out of my price range) and was playing with bits of graphics code and drawing stuff using the ST art package *NEOchrome*.

During the year at the telex place I spent most lunch breaks hanging out at the local games shop with others, including Kevin Donkin. He bragged about how he worked on Amiga computers for a company called Taurus. I bugged him for an interview which he eventually arranged.



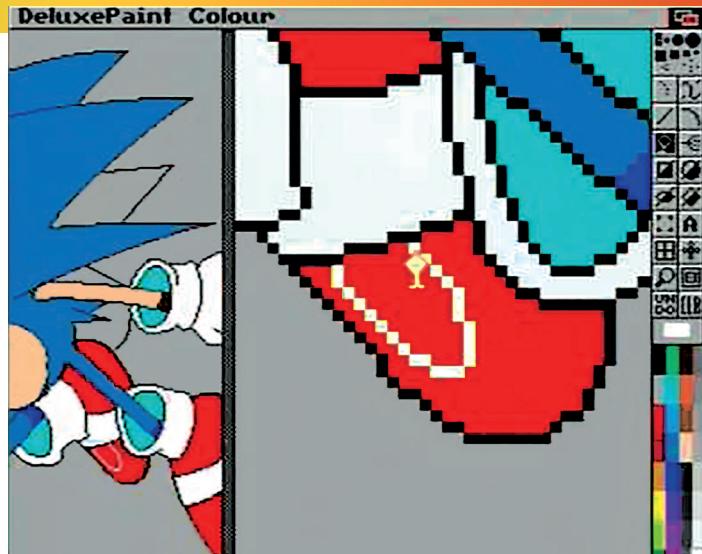
At the interview I met Peter Molyneux who, after chatting about programming for hours, told me he and Kevin had it covered – they had no coding vacancies. But I'd mentioned I could draw a bit so he sat me down in front of an Amiga with *Deluxe Paint* and said, 'Draw a bit of wood.' I sat there playing with the subtle (compared to the ST) palette and cool blend tools until I drew something that looked a bit like a plank with wood grain on it...and somehow got a job as an artist!

My first day was just after the huge storm in 1987. Peter and his business partner Les Edgar could see where the Amiga was headed and wanted to start doing games with a new company. Les came up with Bullfrog as a placeholder name and reference to the parent company Taurus (named after the fact the two of them shared that star sign), nobody else liked the name but it stuck because there were no better suggestions.

Bullfrog was born and I can claim to be the first employee because the other five people working there were still being paid by Taurus.

Bullfrog's first title was a drum machine though it was a little more than that. It was a kind of *ProTracker* and went on to be used for the music in *Druid II*, *Fusion* and *Populous*. My first ever published work in the industry was an image that became the box art and load screen (complete with colour cycling 'animation') for *ADrum*.

Bullfrog's first title was a port of



Firebird's C64/Spectrum game, *Druid II: Enlightenment*. This had been written by a couple of fourteen-year-old kids called Andrew Bailey (who also coded *ADrum*)

Deluxe Paint – ideal for drawing wood!

"I drew something that looked a bit like a plank with wood grain on it...and somehow got a job as an artist!"

and Dene Carter, who we didn't meet at the time but famously ended up at Bullfrog years later. The port was done with no reference to the original source code at all. I was drawing graphics and editing levels on the Amiga with a C64 running the original's level editor sitting next to it.

I wasn't coding on the game but I came up with the idea of replacing the game's 32x32 blocks with a foreground, background and mask to utilise the Amiga's three source blitting capabilities. I also got to design the collision system simply because I'd actually spent more time in the past trying to do that sort of thing than either of the programmers. I



Hobby Consoles

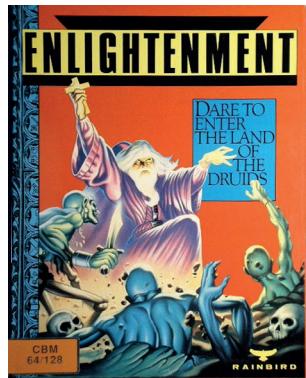
Peter Molyneux and the unaltered Bullfrog.



BULLFROG
PRODUCTIONS LTD



Coded by Kevin Donkin and Peter Molyneux, Glenn's first graphics design job for Bullfrog was *Enlightenment: Druid II*.



Fusion, made from bits and pieces of *Druid II*.

think Bullfrog were paid £7000 for the game which didn't get close to covering costs, it never sold enough to make a royalty payment.

Fusion was an attempt to utilise as much as possible from *Druid II* and make a game more cheaply. Peter added some flexibility to the editor. This meant that masks and foregrounds could be mixed in any combination, allowing some nice effects and increased variation. It also ran in 64 colour half-bright mode which gave 32 extra colours half as bright as the normal 32. These were used for shadows. This was actually pretty stupid as it meant the game needed a small window to run at a near-decent frame rate.

The game itself was a weird mix of shooter and puzzle game, which seemed like a surefire win at the time but with hindsight probably just made it less likely to appeal to anyone. Although Electronic Arts published it, it had the same producer as *Druid II* since Joss Ellis had moved there from Firebird. I think it

was bought for £10,000 which still didn't cover the costs although it had been cheaper to make as Kevin had handled almost all of the programming. This had allowed Peter to go back to working for Taurus for a while. *Fusion* also featured support for a second joystick button if you used a Sega Master System joystick. It also recorded your game and played it back as an 'attract mode', the player could also break into this playback and take over at any point. It predated *Killing Game Show* by over a year too.

Making a 'god game' work

At this point I was acutely aware of the fact that the company was running at a loss and nobody had given me anything to do. I took matters into my own hands and brought my ST into the office, ostensibly to port *Fusion* to it but more to brush up my programming skills in case I needed a new job. After

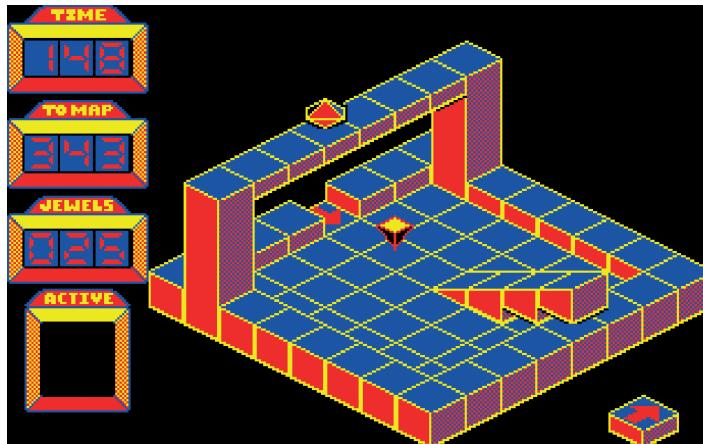


a few hours it quickly became apparent that the ST just couldn't handle the horizontal scrolling. The 68000's shift instructions were just too slow which is of course why the Amiga has hardware for blitting and scrolling.

It was apparent that I wasn't going to be able to turn Bullfrog's fortunes round with an ST version of *Fusion* so I decided to try something that I'd been thinking about for a while. My favourite game on my Amstrad CPC464 had been Paul Shirley's classic *Spindizzy*. I set about recreating its isometric system.

Spindizzy screens seemed to consist of an 8x8x8 grid of isometric blocks, each drawn in 32x24 pixels. Clearly there was something more than that going on to get it working so quickly on 8-bit machines but for now, I was planning to brute force it.

I drew some blocks just like some of *Spindizzy*'s. Basically a set of 16 that



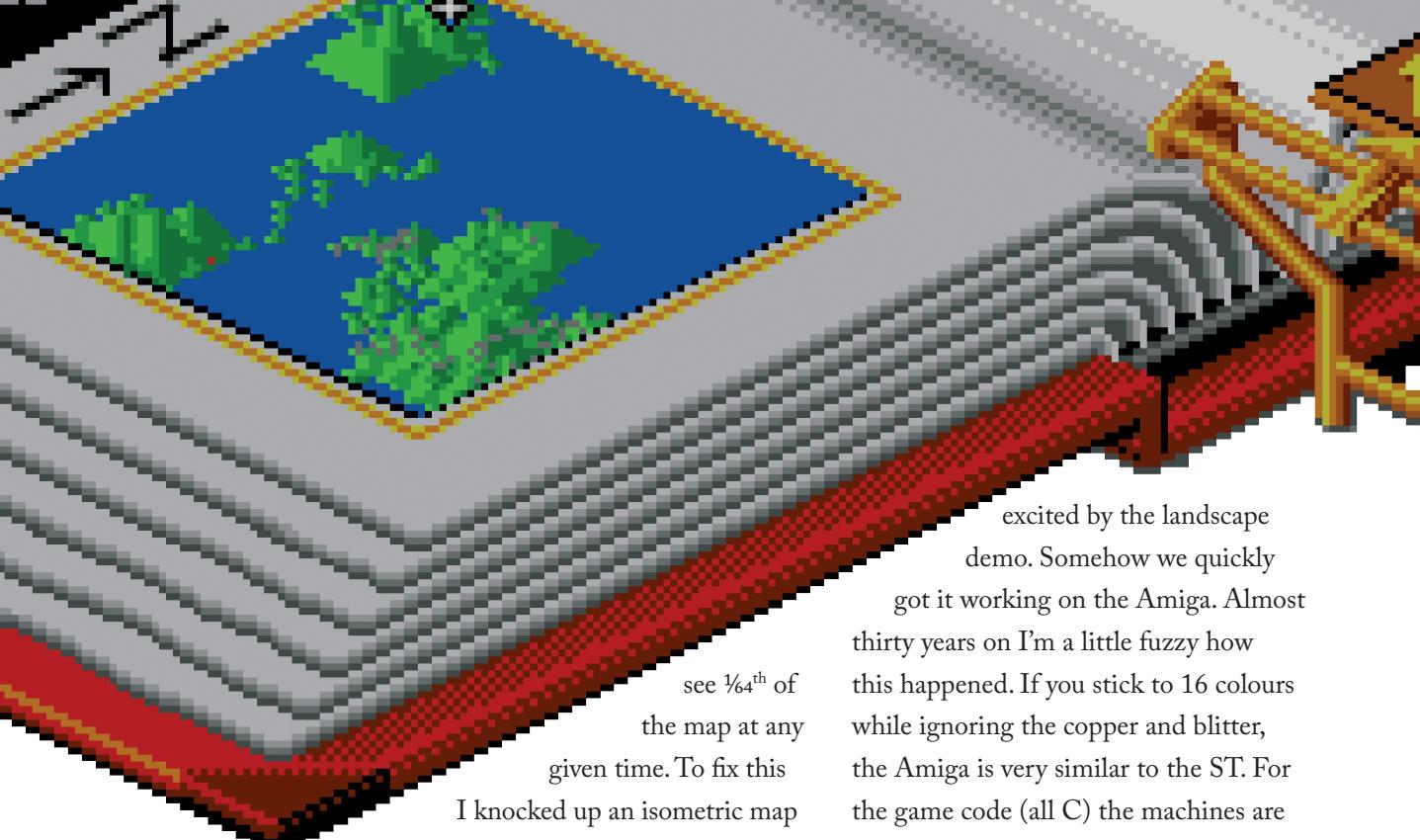
handled all of the possible combinations needed to make a set of slopes. I then filled the map memory with random block numbers and, sure enough, the ST could throw down these blocks at a decent speed. This was largely due to the fact that they were drawn on 16 pixel boundaries so they didn't suffer from the slow-shift problem that had foiled my attempt to port *Fusion*.

The problem was, I now needed some map data rather than random floating blocks. At this point I made the first of many laziness inspired decisions: I could have written an editor but I reckoned it would be easier to write some code to generate test data so I wrote my first landscape generator.

This was basically a few pages of C that threw my 16 blocks into the map memory in a way that looked a bit like a landscape. I say 'a bit' because it really looked more like a bunch of intersecting green pyramids. It was a slight pain to check the generated maps as to see them you had to scroll the 8x8 viewing window around the 64x64 map. You could only

Spindizzy from Electronic Arts – on the Amstrad CPC **above** – the classic game by Paul Shirley, became the inadvertent inspiration behind Bullfrog's hit 'god game'.





Populous – a mish mash of graphical pyramids that morphed into a game.

see $\frac{1}{64}$ th of the map at any given time. To fix this

I knocked up an isometric map view and stuck it in the top left corner of the screen where it was safe from being obscured by the 8x8 isometric view in the bottom right (the exact same spot it had been in *Spindizzy*).

The map looked cool but wasn't making the world look any less like a bunch of intersecting pyramids so I set about writing the editor after all. It was pretty simple, you could basically scroll around with the joystick and make a bump go up and down in the centre of the 8x8 isometric view. At this point I'd been working on it for three days over a bank holiday weekend and had no idea what the hell it was supposed to be, I was just looking forward to showing it to people on the Tuesday morning.

On that Tuesday morning, Peter was still working on Taurus stuff, as he had been for several months but was very

excited by the landscape demo. Somehow we quickly got it working on the Amiga. Almost thirty years on I'm a little fuzzy how this happened. If you stick to 16 colours while ignoring the copper and blitter, the Amiga is very similar to the ST. For the game code (all C) the machines are identical and the screen formats aren't that different. Somehow the demo was ported in a few days, probably with Kevin's help. All of the portable source code was kept portable – and so *Populous* was born.

Sticking on the labels

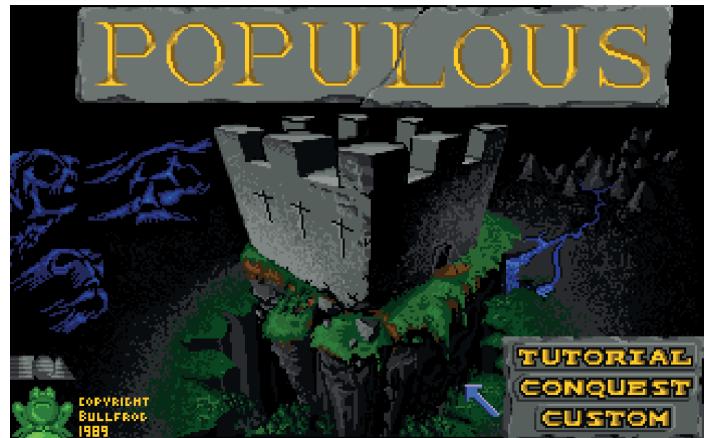
Initially files were transferred between Amiga and ST via the null modem cable that we had previously been using to play *Stunt Car Racer*. We quickly moved to a bit of Amiga software called *Dos2DOS* which allowed the Amiga to read and write DOS format disks which the ST could also access. Far quicker.

Peter started working on the game a week or so later. The entire development took only seven months. Peter and I were the only people working on it full time. He designed and coded the

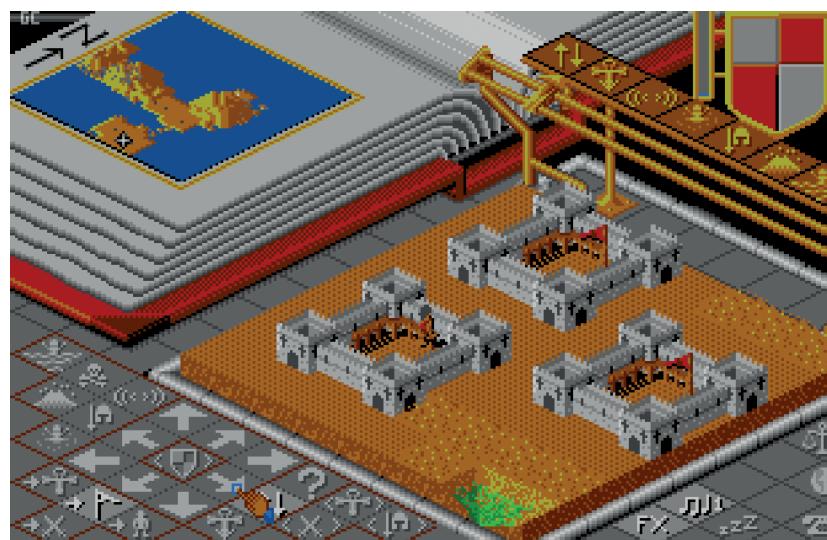
gameplay while I programmed both versions of the graphic engine and drew all of the in-game graphics as well as handling the ST system specifics. Kevin helped Peter with some of the Amiga specifics while a couple of artists helped out with the fact that I couldn't seem to draw anything bigger than about 32x32 pixels. They provided the load screen and the 'goblin lord' character that says 'well done mortal' when you win a level. His face inexplicably shows up in a lot of Amiga demos.

Somehow we decided to make the game multiplayer. I really don't know how that happened, it can't just have been just because that null modem cable was still strung between our machines. It was an interesting network model, the game only passed a few bytes of information per frame that described the player's actions. The downside of this approach was that you had to make the game entirely deterministic. The simulation has to stay entirely in sync between players, which is tough to do but saves a lot of bandwidth compared to one player being the host and sending all the info on where everything is.

At this point there was no playable single player game. Peter and I would typically work until about seven or eight pm and then stop to play the game multiplayer for a few hours. During this period we tried all sorts of weapon spells, people-production tunings and so on. It went from easily taking an hour to play down to 5-10 minutes, a number



"Somehow we decided to make the game multiplayer. I really don't know how that happened..."



that has stupidly crept back up again with every *Populous* sequel or 'spiritual successor'.

This was all very cool but the game was still multiplayer only, so Peter switched his focus to writing a computer opponent that could beat me. The cool thing about this is that I know exactly how it worked because we basically 'buddy coded' that side of the AI. I was

sitting at my ST, getting the *Fusion* port through EA's QA which basically meant waiting around for a phone call while they looked for bugs. I sat there with my

course really just random number seeds. Each time you finished one you'd have a certain number of points and these would skip you through that number



Popular Populous,
L to R: a forest on
the Atari ST; cakeland
on the SNES;
DOS hot volcanic
action; Master System
hillsides with trees; a
Mega Drive wasteland.

feet up watching and talking to Peter about every line of code he wrote. It's a great way to work. The main way the AI opponent worked was that it had a massive speed advantage. It could make a 'move' every single frame. If you sent a flood he could save fifty drowning people in two seconds. One of the main ways of tuning the AI was to stick a delay on its reactions. The hardest computer opponent setting was basically a super-fast moron but it didn't feel like that while playing.

Now the game had two modes, multiplayer and custom mode where you got to set up your opponent. How fast is he? How many people does he start with? which spells can he and you use? It was fun but it still had something very important missing even though we were only weeks from release.

Luckily Joss Ellis was still our producer at EA and he'd worked on *The Sentinel* while at Firebird. In *The Sentinel* there were 10,000 levels which were of

of levels. You'd then get a code which served as a save game but was basically just a seed with some sort of checksum. We basically ripped this off wholesale for *Populous*'s conquest mode. I can't be sure but I suspect this is the only mode that ninety-five percent-plus of those who played it ever saw. If it hadn't have been there *Populous* would have been a cool curiosity, but I don't think many people would have actually played it.

Populous was an Amiga-first game but it went on to be released on at least sixteen formats including SNES where it was a launch title. My favourite thing about working on it was the way the 'flat land' became a resource and how good it felt to manipulate the landscape. I love the way that it happened organically. There was no design document stating how the landscape would work as a resource, this was all from a completely speculative experiment.

At my smuggest I like to liken it to Rubik's cube. Erno Rubik wasn't trying

to make a puzzle when he made the first cube prototype. He wasn't attempting to build something specified by a great puzzle designer and run through focus

Polygon renderer and was pretty fast considering that it worked with 16x16 pixel dither patterns instead of flat colours. This meant that it looked very



groups. He was just fascinated with the engineering problem of keeping those corners and edges attached. He later put stickers on it and found he'd created the best puzzle of its type ever. It feels like it was somehow there waiting to be discovered. Is it hyperbole to compare *Populous* to this? Probably. There's also a possibility that I'm trying to imply that, in this analogy at least, Peter is just the bloke who put the stickers on.

Making the engine work hard

In contrast *Powermonger* wasn't a speculative development at all. Peter wanted to do a war game with more direct control over groups of troops, I wanted to update the technology. I experimented with a double-density, less limited version of the *Populous* engine. The blocks were half the size and there were two different slopes instead of one but I got bored and decided I wanted to learn 3D. I was quite proud of *Powermonger*'s tech. It was my first

colourful, almost texture mapped. It also meant we could zoom in and out. The downside is that zoomed out, it was drawing several hundred polygons and the frame rate slowed to a crawl. I couldn't even use the Amiga's extra hardware to help out because at this point the polygons were tiny on screen and the smaller something is on screen, the less point there is asking the blitter to draw it for you.

Personally, I didn't like the gameplay of *Powermonger*, it was too fiddly, too slow, too boring and not as much fun

The army marches, an introduction screen from *Powermonger*, built on the *Populous* engine, but slower and more fiddly to play.





Above: marching the troops to battle – in *Powermonger* the player cannot form the land as in *Populous*, but some actions can have an effect on the weather.

Right: level 20 of *Flood*.

to work on as *Populous* had been. It also almost drove Peter mad. I did a lot of my groundwork on it while Peter was handling the PC port of *Populous*.

The game was released just before Christmas in 1990 even though we were still working on it in early December. EA really rushed it through QA but they kind of had to because it had more UK preorders than anything they'd released before. *Powermonger* is a weird game, I'm always a little incredulous when someone tells me that they loved it and played it to death.

Flood was being developed by Sean Cooper (who had been involved as a tester and artist on the *Populous* data-disk) while I was working on *Powermonger*. My involvement was mostly just the ST port but I did have a little other input. Most notably all of the single screen wide levels were mine. This was largely because the ST was so bad at horizontal scrolling.

Populous II development was rather different from the original. The ST and Amiga had switched place in terms of

importance by this point. It was very much aimed at Amiga first. The blitter was used extensively, the palette was freed from being ST compatible, the game was playable full screen. It also featured a year of work by two great artists (Paul McLaughlan and Gary Carr) while the original had taken maybe a month in total of me taking breaks from coding.

The game was better in every way, it had 36 spells and effects rather than the original six. Some of these were mad, like swamps that obey the rules of Conway's *Life* and 'fonts' that cause characters to change side. To be honest, I found it a little too confusing to play or maybe I'm a narcissist or maybe I was



just itching to start playing with the PC but I was never quite as into the sequel.

Syndicate had a very weird history. It actually started out as a four-window strategy platform thing that somehow got sidetracked into *Flood*. After *Flood* Sean Cooper went back to it. It was still going to be about four separate characters but at some point I'd shown Sean an experiment I'd been working on. Back when I started on *Populous* I'd been attempting to do what *Spinndizzy*

had done on the 8-bits but, thanks to the extra power of the 16-bit machines, I'd been able to brute-force 8x8 isometric blocks onto the screen. At some point around the time I started on *Powermonger* I'd also written my take on how a 'partial screen-space update' isometric engine would work. I'd shown this to Sean. He set about writing this for the PC where it became the basis of *Syndicate* and much later, the basis of a Flash player-based engine that was pretty successful in the early days of Facebook gaming. It also got ported to Amiga by Mike Diskett (with help from Mark Lamport I think) as by then Bullfrog's main focus had switched to pc. They did an amazing job though; full support for the Amiga 1200, I believe, though I wasn't really paying attention as I was playing with that lovely 256-colour mode on pc.

Theme Park was another port from the pc by Disky and Mark. This one was even more impressive than *Syndicate* as the pc version was in 256 colours. I really had very little to do with this as I hadn't even worked on the pc original.

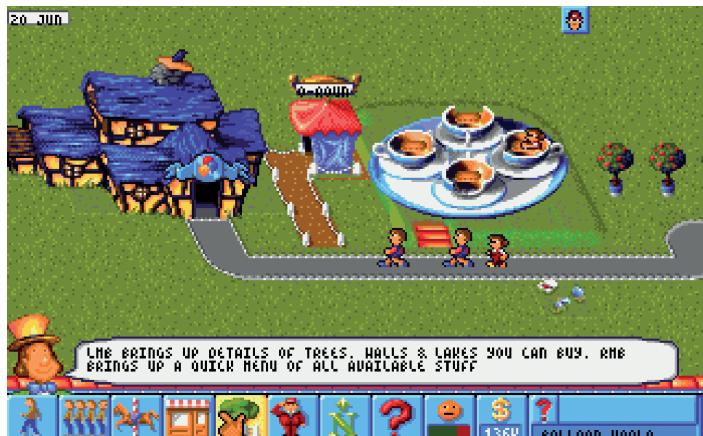
Magic Carpet was never even planned for the Amiga though googling 'Magic Carpet Amiga' suggests otherwise. This is because the Amiga press had always been good to Bullfrog. At some point while promoting *Syndicate* or *Theme Park* we had a visit from *CUAmiga* magazine and, while touring the office, someone saw an early version of *Magic Carpet*. They asked if it would come to Amiga. Instead of

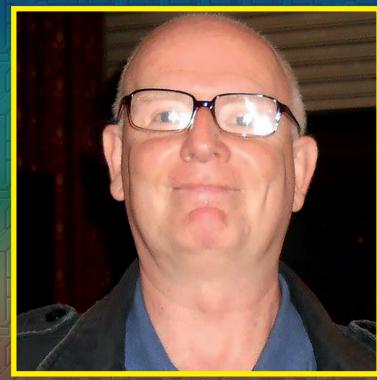


Cyberpunk action in *Syndicate*.

saying 'no' I suggested 'maybe on CD32', a machine I didn't really know anything about beyond the fact that it sort of had a byte-per-pixel mode. They printed it and twenty years later, a thread started on an Amiga forum about it. Even when I joined to explain the truth, some people insisted I was wrong. 

Theme Park – who needs a real fun park to visit? **Top:** the family go for a ride in 256 colours AGA and **below** the teacup ride and shop.





Simon Butler

Starting out on the Atari ST, Simon soon applied his graphic design skills to games on the Amiga, including many high-profile titles such as Ocean Software's *Total Recall*.

I had actually left Ocean when the transition to the 16-bit machines took place. In fact, it was Ocean's hesitation to make the move that caused me to leave in the first place.

I'd started work on the Commodore version of *RoboCop* when my old friend Steve Cain approached me. He told me that he was putting together a small company developing for Arc, the publishing arm of Atari. He said that I would be working on the Atari ST and Amiga.

I can't honestly say that I had lain awake at nights dreaming of the 16-bit machines but I must admit that the restrictions of 8-bits had begun to pall more than somewhat. Seeing the arcade machines rolling in and marvelling

at their capabilities and then having to downgrade everything to whatever conversion you were on did put one's teeth on edge at times.

So one morning, while mulling over my decision for Steve I attended an informal get-together of the development staff in the basement of Ocean, Central Street.

What we discussed I cannot recall, but I do remember vividly that Gary Bracey, once finished with whatever news he was giving us asked if anyone had any questions. I leapt at the opportunity and asked when Ocean would be graduating to 16-bit machines. His reply was that he could state categorically that Ocean had no immediate plans for moving away from

The somewhat shiny Ocean logo – much redesigned from its original incarnation.



their current line of 8-bit development. It really was a no-brainer; I went to my desk, composed myself and then tracked down Gary so I could tender my immediate resignation.

So ended my first stint as an in-house employee with Ocean. I was off to greener pastures. Silly me.

I can't speak for Ocean's transition to the 16-bit machines, they made that move during my absence. I went straight from 8-bit to a nice shiny Atari ST while my Amiga sat gathering dust on someone else's desk.

All of my graphics for my Amiga titles while away from Ocean were developed for the most part on the Atari ST and then simply ported across. What an exciting anecdote! But I did have my name on at least four Amiga titles at that point.

The only real exception to this was an abortive and thankfully unreleased version of *Manic Miner* for which I was contracted to create the graphics. The coder – and I use the term exceptionally loosely – didn't want sprites and background graphics; he wanted background graphics that were to be animated, as I was supposed to draw every sprite animating in every version of the background tiles. That didn't happen and I skipped away from that particular trainwreck as fast as humanly possible.

But as painful as that experience was at least it meant I did spend some quality time actually working hands-on with an Amiga for once.



My next encounter with the Amiga was the infamous episode with the laughingly named Active

Total Recall – Simon was literally parachuted in to save this game from the 'bin'.

"So ended my first stint as an in-house employee with Ocean. I was off to greener pastures. Silly me."

Minds and their *Total Recall* licence. I did the graphics for *Gazza 2* while simultaneously attempting to salvage the abomination they had created to date.



The manager options screen from *Gazza II* – the in-game overhead view was a simple one.

Once that debacle was out of the way, I was back at Ocean and this was really when the Amiga figured prominently in my career.

There are others who would be able to trot out exact dates of when and what



Army Moves: coding
Marc E H Dawson;
graphics Simon Butler;
music David Whittaker.

they were doing at any given point in those days at Ocean but for me – after so many years and so many more titles – I just struggle to remember what I had for breakfast today.

"It just hurts my head to see what talent exists and how they are pushing the Amiga even now."

I do know that during my second stint at Ocean I did *Army Moves*, then some static bitmaps on *Elf*, followed by character design and animation on the main character in *Pushover*.

Then I spent a massive chunk of my career working on the nightmare that was *Universal Monsters*. That was supposed to be an original title and the premise was basically a really

cutesy, fun, isometric spooky adventure influenced heavily by *Knight Lore*.

Nevertheless, Ocean being who

they were, wouldn't allow that to happen without slapping a licence on it, combined with a barrel-load of size and graphic restrictions from Universal Studios regarding their characters.

It wasn't long before the entire project spiralled horrendously out of control and rather than throw our hands up in surrender we soldiered on for what seemed like forever until the plug was finally pulled.

After that I did have titles converted across to the Amiga so I'm proud to say that my graphics in *The Addams Family* look as good there as they did on the SNES, but *Dennis the Menace* is a project I'd just as soon forget for a wide variety of reasons.

Just one of those machines

My association with the Amiga ended with my departure from Ocean for the second and final time, but I have had a series of titles released since 2010 by Retroguru on a staggering array of machines which includes the Amiga 500.

The tool of choice for the Amiga was obviously the incredibly powerful and versatile *Deluxe Paint*. I can't remember what version I used, but I do remember other Amiga artists waxing lyrical about various new doodads and tricks that each new version could perform.

I was simply workman-like with my graphics and for me if I knew the basics of something I never delved any deeper just in case I got myself lost in technology. Not quite a Luddite, but less



Colin Curly, designed by Simon, hero of *Pushover*, needs help to recover his snacks.



is more is always the mantra that has served me best.

I must honestly say that while I did have games converted across to the Amiga, and while I also spent a fair period of my time working hands-on with the Amiga I was never a true fan compared to those who went weak at the knees at the very mention of its name.

Why that is, I just don't know. I found it easy to use, it was far more user friendly for an artist than the Atari ST,



but I just never warmed to it.

Strange really, I couldn't explain why if you held me at gunpoint and to do that you'd have to get to the back of an exceptionally long queue.

To me it's just one of those machines I worked on during my career but it's not got that warm fuzzy special place that some of the others have attained.

I fully understand why it is held in such high regard when I think back to the titles that were released at the time

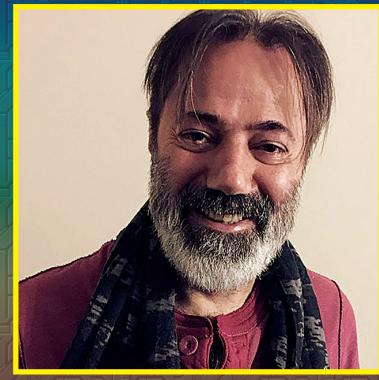
and even today when I see pixel art created by Amiga fans, it just hurts my head to see what talent exists and how they are pushing the Amiga even now.

It fully deserves its place in the pantheon of gaming machines, I'm glad it crossed my path and I realise that without the Amiga my career would probably have stalled decades since. For that I am truly grateful. 

Simon's proudest Amiga moment – *The Addams Family*, Green Goblin to the left and the sinister Tree above.



Left: one to forget for a variety of reasons – *Dennis the Menace*.



Mevlut Dinc

Mev started out coding a string of hits on the Spectrum. Though developing a number of games for the Amiga, he is best known for *First Samurai*, a game he believes to be one of the most pirated for the system due to its short shelf life.

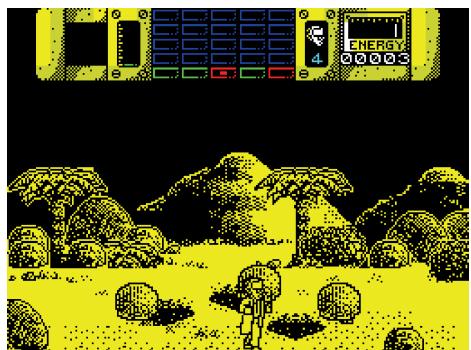
My involvement with games was by complete chance as was my coming and living in England. I started programming on the 8-bit home computers (ZX Spectrum), creating a string of successful games including *Enduro Racer*, *Last Ninja 2*, *First Samurai* and *Street Racer*. After finishing *Last Ninja 2* my intention was to setup my own studio, which I did with John Twiddy and Hugh Riley and formed Vivid Image Developments.

At the end of 2000 I went to my native country of Turkey to kick start the gaming sector. More success followed there with Turkey's first and biggest MMORPG[†], the world's first 11 vs 11

online soccer game as well as forming the world's first digital games federation. I'm now back in the UK and recently setup Pixel Age Studios with Raffaele Cecco.

My involvement with Amiga started at Vivid Image, our first two games *Hammerfist* and *Time Machine* were developed on the Amiga as the lead machine. Commodore launched the Amiga more as a business computer than a games machine. It was games like *Shadow of the Beast*, *Turrican*, *Stunt Car Racer*, and *First Samurai* that defined it as a great computer games platform.

When we set up Vivid Image Developments I wanted to start with a very ambitious game that would be better and bigger than *Last Ninja 2*. But it was decided that we should start



with a completely different and original title as our first game. I went along with the decision, which resulted in *Hammerfist*. Although it was really great both technically and visually I did not feel that it truly captured what we could do. Our second game *Time Machine* was indeed very original and cleverly done to fit on the A500. Raff Cecco is one of the great British game developers and I always wanted to work with him. I convinced him to do the Spectrum and Amstrad versions of *Time Machine*.

I still wanted to develop a great combat arcade adventure, which also took full advantage of the Amiga. Since we couldn't really do another ninja game I thought of doing a samurai game instead. And, I also thought *First Samurai* would be a good title instead of *Last something*. Both the title and the fact of doing a samurai game got people talking, making possible comparisons with *Last Ninja*. So, we started getting good publicity very early on.

We had a five-year contract with Activision but in 1990 they ran into some problems, which resulted in us signing a deal with Mirrorsoft to publish *First Samurai*. I managed to convince Raffaele to work with us on *First Samurai*, and I must say that a lot of the credit must go to his excellent programming, not of course forgetting the amazing graphics by Teoman Irmak; as far as I am concerned *First Samurai* graphics have to be some of the very best on the Amiga.

We all worked very hard and



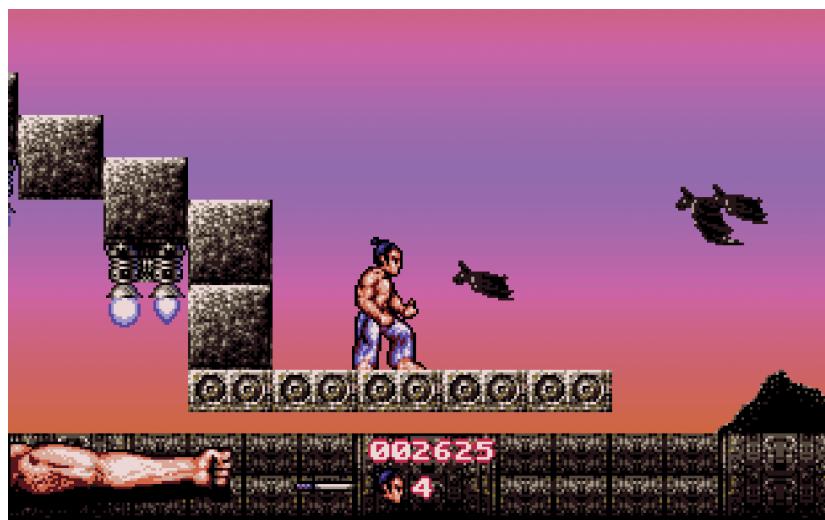
contributed to the game. There are many aspects to *First Samurai* that made it unique; it was technically superb in every way, coupled with amazing graphics, fantastic sound effects and gameplay.

I also think the sheer size of the game and many different elements of gameplay surprised a lot of people; there was hand-to-hand and armed fighting, arcade adventure, many puzzles and very unique end-of-level bosses.

I did admit this before but it's probably worth mentioning it again that the actual levels were probably too big, maybe each level should have been split into four sublevels, or so.

Humanoid holograms go on the rampage against Centro-Holographix in 1990's *Hammerfist*.

Due to unfortunate circumstances, *First Samurai* was only on the shop shelves for a week and yet the game has become a classic.





The beautifully graduated sky is only one of *First Samurai's* graphic treats.

To me there are many highlights to the game. The title music is probably one of the best game tunes ever! Many musicians sent us tunes but I chose one composed by 16-year-old Michael Davis (I hope I remembered the name right). Raff sampled a lot of sound effects from rock and classic CDs for testing purposes until the actual fx were ready and they sounded very good. *Oh no my sword!* is the voice of Raff! Of course, my favourite is *Hallelujah!*

Our good friend Nick Jones, another great British programmer, did the in-game music. I tried many things with the sound driver to enable us to use multiple sound fx while the music was playing.

The graphics and all the visual effects in *First Samurai* were groundbreaking in many ways. We worked hard to make it easy for the artists to create and test all the graphics and also for Raff to use them in the game efficiently and easily.

We designed and developed a game editor specifically for the *First Samurai*; Teoman could test all the graphics including the backgrounds, effects and

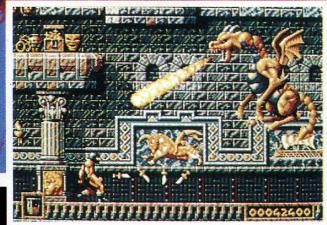
animations before handing them to Raff. I think we kept working on the editor right until the end of development of the game itself! John Twiddy did a great job on the editor.

One other thing that I'm very proud of is the sky effect in the game. Amiga had amazing hardware and with the copper you can change the colour of every pixel vertically with a resolution of 16 gradients for each colour. We had written an editor to create many different and nice looking sky colour patterns. No matter what I did I could not get rid of the nasty colour change between each of the 16 colour blocks! But, I never easily give up, I cannot remember how long I tried but I accidentally discovered a combination that worked, and the skyline just looked amazing. I am sure a lot of people must have wondered what clever programming tricks we used to get that effect but I can reveal now that it was just endless experimenting and patience!

First Samurai was released in 1991 and was voted Game of the Year. However, with the death of Robert Maxwell and the demise of Mirrorsoft the game was only on the shelves for one week. It was probably one of the most copied games ever, because people couldn't buy the game, they simply exchanged disks in the school playground. I know this because at the time the help lines were receiving more calls on *First Samurai* than any other game!

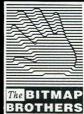


THE BITMAP BROTHERS



ST
version shown

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Featuring a revolutionary system of artificial intelligence, your opponents react to your actions and interact with the environment.

Perhaps guile will achieve more than brute strength! Your cunning, as well as skill with the fearsome array of weapons at your disposal, are needed equally to overcome the enemy...

Award-winning Bitmap graphics and music by Nation 12 make this their most exciting game ever...

Have you got what it takes to be a GOD?

Amiga, ST, PC





Allister Brimble on David Whittaker

With a list of titles credited to his name such as *Alien Breed* and *Superfrog*, here Allister takes a look back at the talent that is David Whittaker, a composer so in demand in the 1980s and early 1990s that the overflow benefited other music writers.

Right: David Whittaker photographed in 2005 at Traveller's Tales, the company that developed games for Psygnosis, Sony and Disney Interactive among many other top-flight game studios.

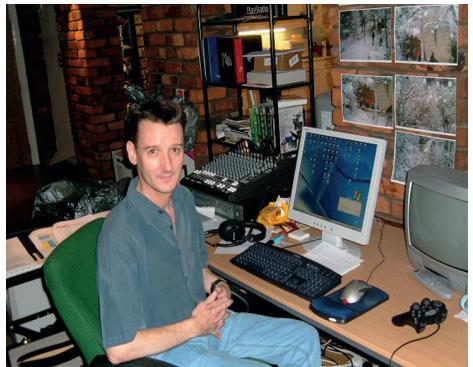
The Commodore Amiga was groundbreaking for its sound capabilities. Before the Amiga we were limited to the simple bleeps of the ZX Spectrum and analogue synthesis on the Commodore 64 with the occasional poor quality sample, but here for the first time we had four channels of 8-bit 29kHz sampled sound, previously only possible

"I was allowed to use a ton of sample/music memory/disk-space by Psygnosis, so I really went to town."

on hardware such as the Fairlight synthesiser, costing many thousands of pounds.

Pioneering game composer and programmer David Whittaker was already responsible for many memorable soundtracks on the Spectrum and C64 such as *Glider Rider*, *The Magic Knight* trilogy and *Lazy Jones*, and ever since hearing synths such as the Fairlight and sampled music from the likes of Peter Gabriel and Depeche Mode, had been hoping that a development such as the

SideWinder – a pretty decent scrolling shoot-em-up made all the better by a soundtrack from David Whittaker.



Amiga would come along.

David was not just a musician but a programmer as well, and this gave him a huge advantage over the competition, especially in the early days, as he was able to quickly build a custom sound driver capable of playing back, not only samples but real time synthesiser sounds



as well, which took none of the Amiga's precious RAM. Many of the techniques he had used in the 8-bit days such as real time vibrato, arpeggios and echoes were often applied to samples and his real-time generated bass lines were cleaner than any sample could ever be. Other music in the early days of the Amiga was grainy and lo-fi as games didn't have much RAM or disk space available but David's music, due to his compact synth sounds and clever sample manipulation, sounded fresh and clean.

I always composed on a separate synth (like the Jupiter 6, CX5M or M1) and manually entered each note by hand, into an assembler file of my drivers. Luckily, the note format I used was compatible across most platforms (C64/Spectrum/ST/Amiga/pc/etc.), so cut'n'pasting those saved a ton of reworking. As most people know, I also reused a lot of my samples, regularly, as getting those was a big job, and people asked for them specifically, which was fine by me.'

David's actual compositions were, by his own admission, simple, but their simplicity made them catchy, fitting, and the overall sound quality was just amazing; some are even rumoured to have been reused by major pop artists! Early games such as *SideWinder* showed promise with heavily manipulated electric guitar and powerful drums. It was impressive at the time, but then came the ground breaking, *Shadow Of The Beast* with vividly clear pan flutes, choir and percussion which fast became



the benchmark for all Amiga music yet to come, most of it failing to reach the same standard!

'I was allowed to use a ton of (by the standards of the time) sample/music memory/disk-space by Psygnosis, so I really went to town. This coincided with me having just bought a new Amiga hardware sampler (still only 8-bit) and a brand new Korg M1, which is where I got those great pan/flute instrument sounds from, so I sampled them all at 20kHz, instead of the usual 8–12, which is why they're so clear and breathy.'

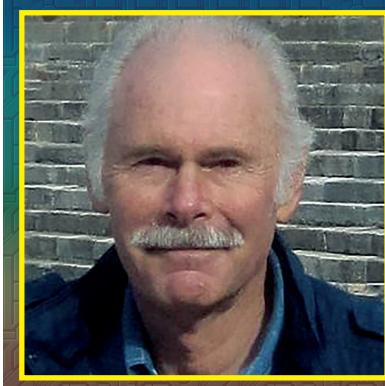
David Whittaker was the man who inspired a generation of sample-based composers, including myself and I hope to capture the essence of his music in the album that accompanies this book.



Furious action and accompanying music by David Whittaker in *Speedball* (1989).

David Whittaker spruced up the sound in Elite's *Beyond the Ice Palace* (1989).





James (Jim) D Sachs

Jim produced the graphics for *Defender of the Crown* – an early Amiga title that really showed off what the computer could do and attracted new gamers in droves to the machine.

I got into computers in 1982 at the relatively advanced age of thirty-three, after having served in the Air Force as a pilot. I had always tried to keep up with technology, and I couldn't help feeling a bit left out when I heard kids talking about bits and bytes. So I decided to buy a Commodore 64 and see what all the buzz was about.

As soon as I took it out of the box, I was hooked. I spent a couple of weeks typing in programs from Commodore magazines



Pushing Commodore 64 graphics to the limit – flying saucers threaten Washington DC with a *Saucer Attack*.

– endless pages of numbers separated by commas. On the rare occasion when I got all the numbers right, I'd be rewarded by some little *Lunar Lander* or *Centipede* game.

Having no storage device, I lost everything when I turned the machine off. My first peripheral was a tape drive.



My second was a HESmon cartridge, which allowed me to get into machine language. I quickly found that once I abandoned BASIC and took direct control of the machine, I could do things that I wasn't seeing in the magazines. I decided to write a shooting game based on the classic sci-fi film *Earth vs The Flying Saucers* (1956). I drew a giant illustration of Washington DC on graph paper, with each square representing a pixel on the screen. It took several weeks to transfer these thousands of dots to the computer one hexadecimal number at a time, but when I finally saw it on the screen I knew I was looking at a level of detail that no C64 had ever displayed before. I completed the game and sold it by mail-order on floppy disks. *Saucer Attack* did fairly well and got positive reviews in the magazines.

For my second effort, I decided to try something even more ambitious – a time-travel game in which the player must traverse different eras in order to find pieces of the shattered crystal which powers his time machine. But



after working on the game for a year, it became obvious that rampant piracy in the C64 world would never allow me to earn a decent living in that market. Anyway, there was a much more exciting Commodore machine on the horizon – the Amiga. So I abandoned *Time Crystal* and gave away the only completed scene at user group meetings. It's still considered by many to be the ultimate demonstration of the C64's limits.

Then the Amiga appeared

I had been following the progress of Amiga Corp's Lorraine in the magazines, and was delighted when Commodore announced that it would be manufactured under their label. I flew to Commodore headquarters in Pennsylvania, and met with company officials to ask for developer status. It was granted on the strength of my C64 work.

I set to work exploring the machine's seemingly boundless graphics capabilities. Those were indescribably exciting days. I couldn't wait to get up each morning, knowing that I would be creating visual effects that had never been seen on a personal computer before. Even drawing pixel by pixel with the most primitive graphics tools (*Graphicraft*), I was able to



Time Crystal – ultimate demonstration of the C64's limits – was never completed.

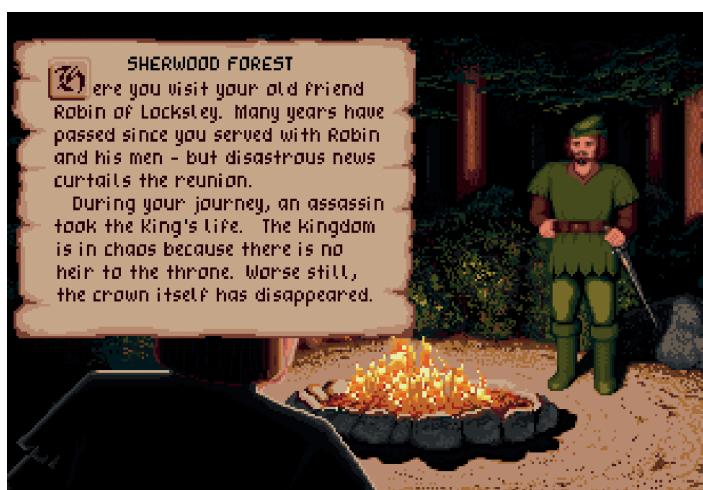
produce stunning images.

Instead of C64 User Groups, I was now going to Amiga meetings and sharing my newfound knowledge by giving away artwork on slideshow disks. Copies of these soon became widespread,

"I set to work exploring the machine's seemingly boundless graphics capabilities. Those were indescribably exciting days."

and attracted the attention of game developers. I was contacted by Bob Jacob of Cinemaware to provide the graphics for a new type of computer game with the look and feel of a movie. Designed by Kellyn Beeck and programmed by RJ Mical, *Defender of the Crown* was the first product to really show off the

An assassin has killed the king, the kingdom is in chaos but the graphics are hot! *Defender of the Crown* showed off the Amiga's capabilities with the look of a film.





Geoffrey's monthly statistics for October 1149 from *Defender of the Crown*.

Amiga's awesome capabilities. It went on to become the most ported game in history, but no other machine was ever able to match the look of the Amiga graphics.

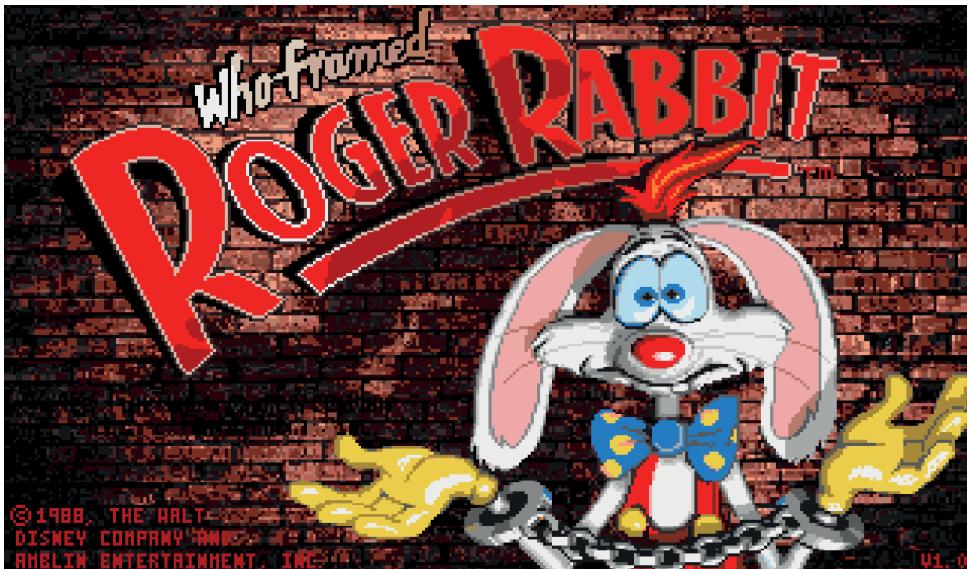
I did graphics for several more games after that, including *Ports of Call*, *Centurian: Defender of Rome*, and *Who Framed Roger Rabbit*. I also did a lot of freelance work such as magazine

and book covers, and animated demos for Mattel, Commodore and other companies. When Commodore decided to develop a CD-ROM-based Amiga, I was tapped to create the opening screens and user interface for CD-TV.

I taught computer graphics at all the AmiExpo conferences, and delivered the keynote addresses at some. I'll never forget travelling to Germany with the

Ports of Call – a ship trading game which is much more enjoyable to play than it sounds.





James created the title screen for the adaption of *Who Framed Roger Rabbit* (the in-game graphics were by his friend Eric Daniels).



Father of the Amiga, Jay Miner. We needed planes, trains and automobiles to get to Cologne from California. The next morning there were 30,000 Amiga fans waiting for the gates to open. The level of excitement generated by that remarkable machine was unprecedented. My favourite quote from Dave Haynie is, 'Amiga users make Mac users look like IBM users'.

I had just completed *Defender of the Crown II* for Commodore when the end came for the company. I had hoped that the CD32 machine would break new ground and revitalize the company, but it just didn't happen. Being forced to switch to PCs was a real letdown, and I still miss the energy of the Amiga crowd. I could do things with that machine that I still can't do on a PC, even twenty-five years later. Others felt the same way, and some of them have become my life-long friends. 



Left and below:
Centurion: Defender of Rome has legionary battles but also the fun of the circus and the arena, bundles of Roman enjoyment!



Alex Trowers

When Alex grew up he switched from a Spectrum to an Amiga and then joined Bullfrog in 1990. Alex had design input to each of the company's Amiga hits thereafter, including *Populous II* and *Syndicate*.

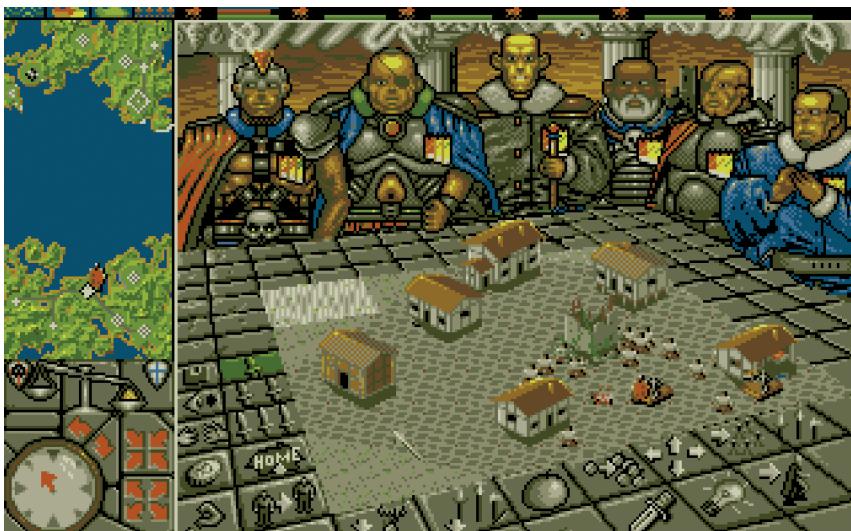
My friend had an Atari ST. We used to bunk off school to play *Populous* on it. When the time came for me to bin the trusty Spectrum and go 16-bit, the Atari ST was my first choice. But I looked into it in a bit more depth and decided that the Amiga was the way to go. I'm glad I did. I didn't need it for the MIDI port – I needed it to play games

balanced on a box at one end and a fish tank at the other. On this most precarious of surfaces sat an Amiga. It was an old A1000, its surface stained yellow-brown from nicotine and packing tape held its expanded memory in place. It didn't have a hard drive. It was the only machine in the office that still required the Kickstart disk. If you

nudged the desk the wrong way, it would reboot itself.

I did manage to snag a lovely Naksha mouse for it though, so that's something.

It was also hooked up to an NTSC monitor, which meant that trying to play a PAL game on it meant losing the bottom part of the screen. As a result, games of *Kick Off 2* were massively imbalanced because whoever



A crowded table – too many additional generals can spoil the battle in *Powermonger*.

on and the games just seemed to be better on the Amiga.

When I joined Bullfrog the office was a tiny, run-down affair above a HiFi shop in Guildford. I can still remember my first 'desk'. It was a piece of wood

was shooting down the screen couldn't actually see the goal.

But that was the machine that built all the levels of *Powermonger*. Peter Molyneux handed me a disk with the latest build on it. It contained Glenn

Corpes's built-in editor and I'd get to work – 175 of them; 193 additional levels for the data disk too.

Everyone else had A2000s – and Glenn, as the self-styled Atari converter, had an ST too. Eventually, I got an upgrade: an A500 whose expanded memory actually fitted on board in the prescribed position. To top it all, it came with a whopping 20MB of external hard drive space and a working serial port. This enabled us to develop the multiplayer game for *Populous II*. Again, there was no network – builds were still passed around on 3.5-inch floppies.

play again until he could win. I don't think he'd ever played against anyone so mechanical as me. Someone who was prepared to do monotonous things over and over to grind an opponent down and claim the victory rather than go for a more entertaining but riskier strategy. That said, this is several years before Robbo turned up on the scene and I have little or no doubt that he took this particular crown.

Bullfrog's methodology was always to build the game for multiplayer to start with. That meant that you could easily test systems without having to wait for



Populous II: Trials of the Olympian Gods – taking the original to another, mainly multiplayer, level.

Multiplayer games were conducted over serial cables.

I'd play against Peter – our chairs backed into each other. The gameplay was very emergent – no two games were the same and each time I came up with a winning strategy, Peter would rewrite the code, change the balance and we'd

an AI to be written. It was also very easy to tweak playing styles on the fly to find out what worked and what didn't. Once we'd got that bit right, it was then just a case of making an AI that would try to use the same tactics as we had.

It also meant that we were forever on the search for Amigas that still had



Alex designed many of the levels in *Syndicate*.

working serial ports. Man, those things were fragile.

Peter was also a dab hand at *Stunt Car Racer*. In fact – original *Populous* aside – that remains the only game I could never beat him at. I think I was also unreasonably excited when *Lotus Challenge 2* came out and we were able to play four-player on two machines.

The desk was as precarious as ever.

As well as the big games, there were several other side projects that people



Biosphere eventually mutated into *Genewars*.

were working on. Kevin had a thing called 256 which was a top-down, rotational shooter inspired by the likes of *Assault 360* (the 256 being derived from the number of distinct ‘degrees’ of rotation the game actually supported). Glenn was, of course, working on many different ways of making landscapes.

My personal favourite was a game called *Biosphere* that was being developed out-of-house by an American called Richard Reed. It had a hex-based height field and these cute little alien dudes who would land on a planet and try to terraform it to order, ensuring that it had the right amount of flora and fauna, and trying not to die in the process.

He would ultimately get hired and, after many, many redesigns, that game would eventually come out for DOS and Windows as *Genewars*.

Sean was working on *Cyber Assault*, a project that later emerged as *Syndicate*. Simon had done a bunch of sprites for it and Paul was busy making concept art in *Deluxe Paint*. (That and introducing me to the wonders of *Sculpt 4D* and the soul-crushing despair that only comes from leaving a render running overnight only to return in the morning and discover that you didn’t enable the lights...) I loved dabbling with the art side of things.

There was just something so very satisfying about pixel pushing. In Paul and Gary I was learning from the best too. I would never call myself an artist – much as I don’t refer to myself as a coder these days – but there was a tiny piece of my artwork in everything from *Powermonger* all the way up to *Gene Wars*.

In fact, if I were to pick the one thing I miss most about those Amiga days it could be summed up in just two words – *D* and *Paint*. 

WHEN YOU'RE THE BEST,
EVERYBODY WANTS TO
STICK ONE ON YOU.



ELECTRONIC ARTS

FROM THE MAKERS OF POPULOUS



ACE...ACE RATED 973, CU AMIGA...SUPER STAR 95%,
C&VG...C&VG HIT 95%, THE ONE...95%, ZERO HERO 93%,
GENERATION4...97%, TILT...95%

 AMIGA



Anthony Ball

After seeing near-perfect conversions of arcade hits on the Amiga, Anthony realised he needed to swap over from his Atari ST, which eventually led him first to Zippo and then Tiertex, where he coded hits such as *Cabal* and *Mercs*.

I first read about the Amiga in an issue of *Byte* magazine in the early 1980s in a paragraph of a rumour section about a 32-bit computer using the Motorola 68000 chip. The first time I saw an Amiga was in 1986.

I had an Atari 800 at the time and attended a local computer club in Preston called PACE and one of the members had just imported an A1000. The graphics really impressed me compared to what I was used to. Over time I saw things like the perfect conversion of *Marble Madness* and other arcade hits. I really wanted an Amiga but at the time it was too expensive, so I bought an Atari ST and taught myself

68000 assembly code using an assembler called *K-Seka*. In its way this was a good thing; because the ST relies on the processor more I had to learn how to optimise to get the best performance out of the CPU.

When it came out the A500 was more affordable and so I got one. I bought the hardware manuals and started to figure the machine out. The hardware's similarity to the Atari 800 amazed me – just generations ahead.

By this time I had started programming the NES for Zippo Games in Manchester (eventually Rare North). The NES had a cut-down 6502 (similar to the CPU in the Atari 800), but after work I would try to figure out more tricks to do with the Amiga and ST hardware.

At Zippo industry veteran John Pickford told me about the idea he had



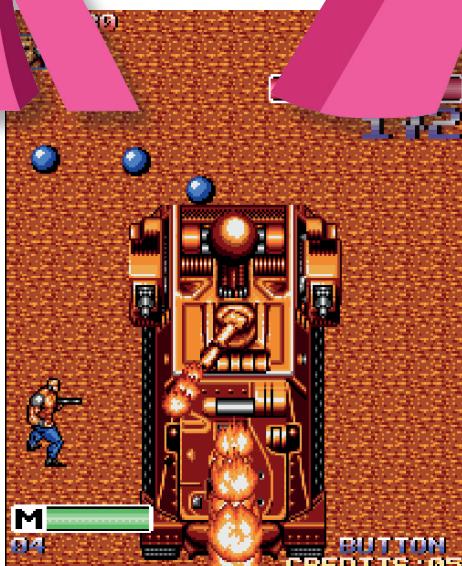
ZIPPO
GAMES

Tiertex

for scrolling in *Cosmic Pirate* on the Amiga. He showed that you only needed to update the sides of the screen when scrolling left or right and so you could let the screen scroll through memory. This way one extra whole screen of scrolling only took one extra line of memory. At Zippo I used to transfer code from a PC to the NES using a transfer cable, which speeded up development time considerably.

I eventually left Zippo to work for Tiertex. Initially I created new copy protections. The Amiga A500 had a master clock input on the video port so that it could sync with a GenLock device. I figured out that by supplying that clock with a slightly faster than normal clock I could speed up the whole computer slightly. By doing this I would make the bit cell size when writing to disks a little smaller, allowing for more information to fit on a track. This made the disks impossible to copy using standard hardware. Donald Campbell, one of Tiertex's owners, was an expert with micro electronics and helped me get it to work.

At Tiertex I wrote *Mercs* for both Amiga and ST. The Amiga version was the primary version although both



Mercs on the Amiga – top and bottom – and a different display format for the Atari ST version, centre, also written by Anthony.





Jon Burton and Andy Ingram used Anthony's 16-colour background concept in *Cabal*.

machines shared the same graphics. However, the Amiga version had some advantages over the ST, for instance better scrolling and a screen overlay for the panel. On the Amiga I followed a similar programming method to the one I used at Zippo with the NES. I assembled on one Amiga and then transferred the code via a cable to a second Amiga.

While I was at Tiertex I kept working on new ways to take advantage of the Amiga's hardware. I enhanced John Pickford's idea to scroll through memory by using a copper list to create a barrel scroll, so then I only needed to update the top, bottom, left- and right-hand sides of the screen to make a fullscreen scroller. (Normally it required

NES and the more sophisticated Amiga version of Ocean's hit *Cabal* coded by Anthony.



having to redraw the entire screen or use up a lot of memory.) I also thought of an idea to reuse hardware sprites as the screen is being drawn to create a whole 16-colour screen background. I made a demo and showed it to my friends Andy Ingram and Jon Burton, who later used the technique for the mountains in the background of the first Travellers Tales game *Leander*.

Together with David Bland I decided to leave Tiertex to create an original game, *Superhero*. In this I wanted to employ all the tricks I'd figured out over the years. The game had 8-way 60Hz scrolling, an overlaid panel, huge enemy sprites, a 32k background colour palette (normally the Amiga can only display 4k colours), and 16 colour on 16 colour and blitter scaling front end demo effects. Then just before release I was arrested for hacking BSkyB! [later just Sky] The police took all my computers and refused to give them back. I was eventually cleared, but by then seven years had almost passed and the Amiga wasn't that popular anymore. 

MERCES



OLIVER
TREF



Barry Leitch

Now making music for children's toys, Barry is associated with many memorable soundtracks which accompanied top-selling Amiga titles in the early 1990s, from *Lotus Turbo Challenge 2* to *Xenophobe*.

Below: Soundtracker v2.3 – a package that handed control over music from coders to composers.

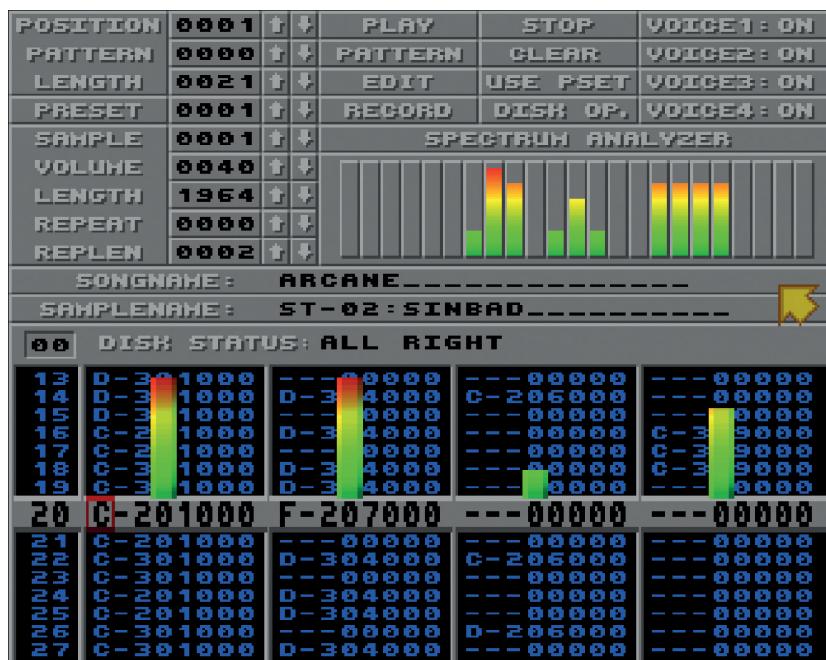
I can't honestly remember when I saw my first Amiga in action, but I remember being amazed at the graphics. It wasn't until early 1988 when I managed to borrow one for a week or two. By that time I was working as a full time composer for Catalyst Coders in Portsmouth, having previously worked freelance on a few Commodore 64 games. I was seventeen at the time. There weren't many full time professional games composers at this time. Probably

five in the entire country, and I was lucky enough to be one of them.

It is imperative to note that up until this point, the only way to put music in a game was with a music driver. There were a couple of commercial packages on the market, but these were not really viable because they used up too much of the valuable resources. The C64 only had 64K RAM, so every little bit counted. Ninety-nine per cent of the music in games used their own custom music

driver. These were closely guarded secrets, as people found ways to squeeze more and more out of the hardware over time.

My Amiga came with a copy of *Soundtracker*, the music composition software. This changed everything as it completely levelled the playing field for composers. Previously you had to depend on that music driver's technical capabilities to make your music sound better. Now we had four channels of sampled



instruments, stereo, and up to 512k of memory! If someone created an instrument sample that you wanted to use, you could simply hack out their sample and use it. Everyone suddenly had access to everyone else's instruments. It took the creative power from the programmer's hands, and turned it over to the composers themselves.

Immediately I started using *Soundtracker* as my compositional tool. It was so quick and intuitive to write music with it. To this day I compose in tracker-based systems (*Renoise* is just unbelievably brilliant).

Fast forward a couple of years, and I was working at Imagitec Design. Imagitec were the biggest software developer in the UK at the time, and very possibly the world. There were now probably about fifteen full time composers working in the game industry in the UK. I was lucky enough to be in the right place at the right time, and for a period of a year or so I got to work on not only all of Imagitec's games, but also all of Gremlin Graphics' titles.

This was a key time in British games development. Gremlin were going from strength to strength, and making absolutely brilliant games. As a composer, I'll be the first to admit, I don't think I'm the best composer in the world. I still cringe when I listen to most of my earlier work, but right around the time when I took on doing all of Gremlin Graphics' music as well as Imagitec's, I finally started to hit my



The platform-based *Harlequin* – released by Gremlin Graphics in 1992 – laid claim to being the strangest game ever, probably because nasties were blasted by firing love-hearts at them; umbrellas could be useful too... One in-game music track borrowed from a Stranglers' remix.



stride as a composer and wrote music that wasn't completely awful. I was living every game composer's dream.

Almost every game I worked on was a Top 10 hit. Many went straight to the number one slot. Imagitec subcontracted me to other publishers as well so I ended up doing conversions of many other companies' games to different platforms. There was a point when the top three games in the charts featured my music. I even started writing on the side for other software companies. And it was all thanks to the Amiga.



TFX – a combative flight sim – used a musical rewrite of a track Barry composed originally for the Amiga demoscene group Anarchy's party competition entry in 1992.

Acid-spitting Xenos hatching from their pods threaten the very existence of humanity and Barry's music won't calm their fevered brows – the Amiga arcade conversion of *Xenophage*.

Thoughts on some games

Lotus Turbo Challenge 2 – the idea for that tune came to me in a dream. I'd gone to bed thinking about what kind of music I wanted to write for it and woke up with that tune in my head.

Utopia – magazines reviewed the game before we'd shipped it. We had plans to do an interactive soundtrack but quickly gave up that idea. The magazine I'm thinking of talked about how the music had the death march in one of the melodies, so after reading that I thought I'd better put it in.



Harlequin – one of the in-game pieces is based on the 12-inch remix of a Stranglers track.

European Champions – this was actually my *Lotus 3* title tune. I left Imagitec before completing it, and Patrick Phelan took over the job, so I took my tune and added some football sounds to it.

TFX – The title tune was written for the Anarchy demoparty music competition in 1992 and later repurposed in *TFX*. My Magnum Opus!

Hero Quest – the seven-minute in-game music fits in 30k!

Xenophage – this shipped with a cassette containing a special version of the title tune arranged with four Amigas. We had to make a special serial cable with a button on the end to click play on all four computers at once. We had to record it hundreds of times because four Amigas won't stay in sync even if you click play at the same time.

Zone Warrior – the high score tune is one of my personal favourites, written at full volume at 3am during a crunch period. The team all filtered into the studio and listened to it before we quit for the night.

Today I write the music for many of the children's toy chips in a tracker using four channels just like the Amiga. So here I am, almost thirty years later doing exactly what I did on the Amiga. 

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Tobias Richter

A big fan of science-fiction, Tobias used his mastery of the Amiga to create fantastic imagery of the *Star Trek* and *Star Wars* universe as well as contributing rendered animations to many television and computer projects, including the famous intro to *Alien Breed*.

Opposite page: three rendered images of the Enterprise from the *Star Trek* franchise.

My first computer was an Amiga 1000 in 1988, right after graduation. I bought it with my own money and a little help from my grandparents. I had seen it in a shop window on my way home almost every day. Most of my friends had a C64, so I was already familiar with Commodore. In school, we worked on Apple IIe, so I knew a thing or two about computers as well – and this seemed to be the perfect fit for me as I was interested in graphics.

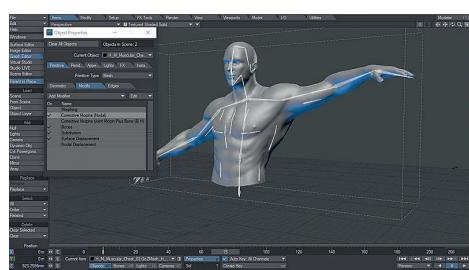
Unfortunately, after setting up the computer I noticed that you could do almost nothing with it with the basic 256K RAM configuration. So next morning, I went to the shop and bought the 256K RAM extension for another insane amount of money. But finally, I could do something with this wondrous machine.

I started working with *Deluxe Paint*, painting pictures of my favourite subjects (mostly sci-fi related) and programmed little things when I started studying computer science at the nearby university. About a year after that I got my first 3D program, *VideoScape 3D* by Allen

Hastings – the program that would later evolve to *Lightwave 3D*, which is still around. With that, you could build 3D models (in a text editor!) and animate them. Of course, these models were just flat geometry without any textures – but it opened up a completely new world. Unfortunately it needed a lot of render power, which I didn't have at that time (specifically RAM). So I went to the local computer store and used their brand new Amiga 2000 to render stuff.

Apart from renders, I always wanted to create my own *Star Trek* game, where I could explore the galaxy. So that's what I did. Early on, before getting into rendering or raytracing, all the game graphics were done in *Deluxe Paint*. I tried to pack everything in that little program: standard flying, delivering things, fights with Klingons, ion storms,

Right: going from strength to strength, *Lightwave 3D* created by Allen Hastings still runs on the Amiga as well as Windows and Mac.

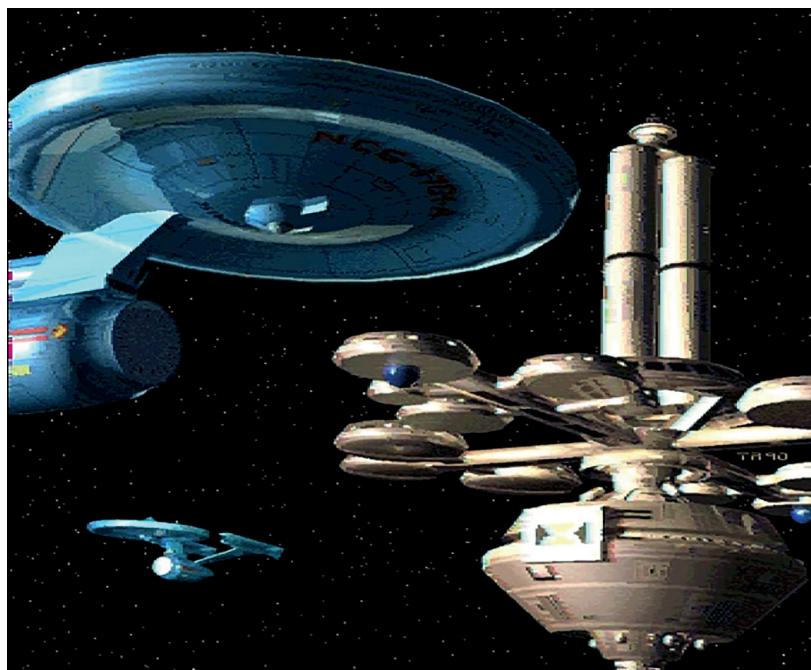


pseudo 3D look, and so on. Of course, I was limited by the computer and my own programming capabilities – as I was always more the graphics guy. Still, I managed to finish the game and it became rather popular – I still get notes occasionally from people that played it back then.

Moving on to the rendering world – my first 3D Enterprise was done in *Videoscape* – with 1000 points (as this was the maximum the program could handle), each edited with a text editor and painstakingly planned ahead on metric graph paper. Since *Videoscape* could only do flat polygons, this was a nice first step, but it wasn't so convincing visually.

That changed when the first raytracing programs came out. Mostly I used the German program *Reflections*, which could handle more realistic renders. With it I built a new Enterprise and lots of other stuff. Sometimes these small images took over a day to render for just one frame. Almost all of my renders had something to do with sci-fi – be it *Star Trek* or *Star Wars*. I probably created even more *Star Wars* models back then.

I got to know the programmer of *Reflections* rather well and suggested some improvements and additions; I even wrote a workshop book on how to use the application. When *Reflections* finally added an animation function I was able to put my models into motion – again a whole new world to explore. It must have been around that time that I

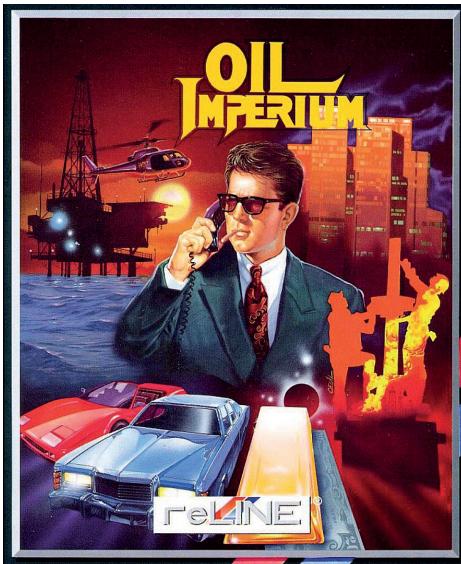


started buying more Amigas in order to handle the workload – first an A2000, later A3000, A4000 and A4000T.

As so often is the case, getting involved in games creation was a happy accident. A couple of my fellow students

"I am still very fond of the Amiga and I have my original A1000 and A4000T in my possession."

came up with the idea of creating a game during our studying time. One of them knew a publisher. As this was the 'golden age' of computer games, there



was high demand, so we quickly reached a deal with the publisher for our first game, *Oil Imperium*. That was a classic 'German' business simulation, but with some action elements.

I provided all the artwork for the game, while my friends were programming it. It was pretty successful

The Royal Family, returned to being German, with additional graphics courtesy of an Amiga and Tobias for *Spitting Image*.

and is still known today, while the other smaller games we did after have been forgotten (perhaps not such a bad thing?) – so I am still proud of what we did back then.

I also started getting into the world of cutscenes and intros, for example with the rendered intro for *Alien Breed*. The most sophisticated work I did then was for the intro of another British sci-fi game, but sadly it was cancelled after months of development.

During that time, I made contact with a German TV producer in Cologne, which was around 200km away from where I was studying. They were using Amigas in their productions (TV and events), so I went to work for them for a couple of weeks during the summer and finally, on completing my studies, I moved to Cologne full time.

By then, we were utilising writeable laser discs to record pictures in 24-bit frame by frame off the Amiga – quite sophisticated for the time. We did graphics for the German version of *Spitting Image* and a children's show called *Romeo*, which was about a blue alien living on a ship in orbit around



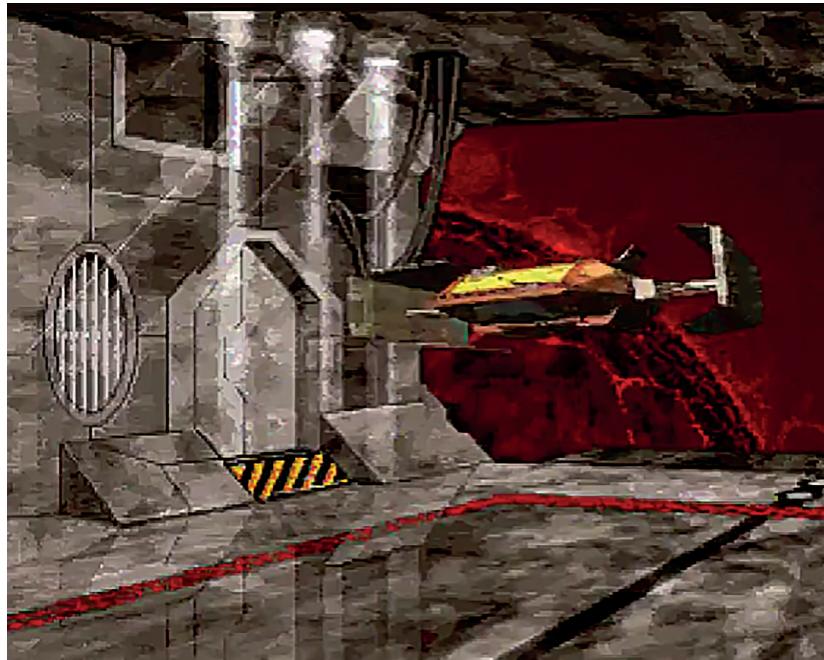


Left and below: the year is 2191 and the galaxy stands on the brink of war...Johnson and Stone were heading home after six months on routine patrol. Nothing had happened and nothing ever did... stills from the rendered *Alien Breed* intro.

the earth. While the alien was a puppet, all the exterior shots and the intro were digitally produced with the Amiga. I always remember that time fondly, because the production was in a big warehouse, with all departments – puppet manufacture, set building, stages, our computer lab – all under one roof. Fun times.

I am still very fond of the Amiga and I have my original A1000 and A4000T in my possession. To me, it was the right computer at the right time; basically, we both grew up together. There was always something new to explore both for the professional programs I used for my graphics, as well as the tons of games I played for hours.

I don't know what would have happened if I hadn't bought that first Amiga – perhaps I would have gone with an Atari (shudder), but that



wouldn't have offered the opportunities the Amiga did, especially in connection with my early TV work and I wouldn't have moved to Cologne. So yes, the Amiga shaped my life quite significantly – and I am thankful for that! 



Ash Hogg

A veteran of the Amiga demoscene and the British gaming business, Ash has developed projects on many systems including the Amiga, on which he created *CJ's Elephant Antics* and *Fantastic Dizzy*.

I dearly love the Amiga. It was truly a mind-blowing computer for its time, and for a budding games developer like me back then, a real pleasure to learn and work with.

Like a lot of people, I couldn't get

"It was all fairly basic stuff, but to me it was as exciting as could be. That game ended up as CJ's Elephant Antics."



one right away when Commodore launched the A1000 since it was very expensive – and I was only a lad in his early teens. Oddly, I can't actually recall exactly why I chose Amiga when the A500 was released, because in fact I had been planning for a while to sell my C64 setup and buy an Atari ST. Fortunately, my father bought me an A500 so that I could keep the C64, and for the next couple of years I learned everything

about Amiga, discovering that aside from amazing games it was just simply a phenomenal desktop computer.

The operating system was so advanced for the time, with true multi-tasking; a power-user's dream. Like countless other owners I spent way too many hours messing around in *Deluxe Paint* even though I have very little artistic ability; it

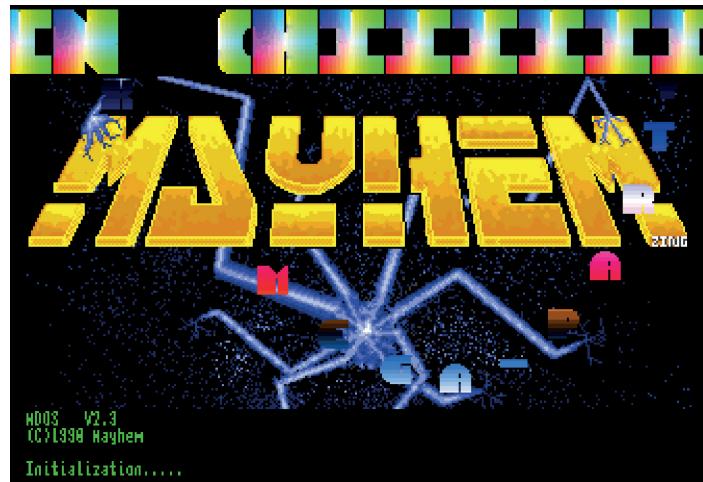
was just such a joyous experience!

Computer magazines of the time seemed so exciting, and it felt like every month they were showcasing some amazing new piece of software which was breaking down the walls of some big industry to the point where you could do it in your bedroom. I suspect many of us thought we could easily run our own newspaper empire or a TV or a movie studio, and it wasn't hard to see why. Software and hardware tools like Video Toaster and *Lightwave 3D* really were ground-breaking; TV shows and movies were actually being produced on these computers with this software.

My heart and my future career lay in programming though, and over the next couple of years I taught myself 68000 assembly language, spent some hard-saved pennies on a couple of expensive Amiga reference manuals, and began to explore the machine from the inside.

What a journey. The graphics hardware was light years ahead of the C64, which I revered. The things you could make it do. Or at least, the things that more advanced coders than myself could do. The Amiga demoscene was filled with incredible technical sorcery, utterly perplexing and pushing me to figure out how they achieved these effects.

After releasing a few fairly average demos myself on the Amiga (under the pseudonym Fermi, first with the Men In Black group, then Cyrus Corp), I started thinking about games. Meeting David Clarke and Jon Smyth (now Jon



Temples) was the turning point for me. After a short period working for Choice Software, who produced games under contract to Ocean, they were working on their own platformer. Showing me a work-in-progress version on the C64, I asked if I could have a go at porting it to the Amiga.

We used to meet up on Saturdays in Belfast city centre, and hang out for a while, usually playing some of the latest coin-ops and grabbing a bite to eat, often before heading back to David's

Still from *HAM Scroll Demo* (1990) from demoscene group Mayhem – code by Fermi, graphics by Fermi, Wonko and Zing.

Facing page: the French level of *CJ's Elephant Antics* and below the sequel *CJ in the USA*.



house. The memories are fairly hazy now, but over some time the game started to firm up on the Amiga. I don't think I ever took the C64 source code from David, but we talked about how he was programming things on the C64 and I would just do the same thing on the Amiga. Jon got on with reworking the graphics, converting the sprites and the 16-by-16-pixel game world 'blocks' into the higher-resolution and more colourful 16-bit versions.

I had also started writing a game level editor on the Amiga, partly just to learn more aspects of programming and partly to help us build the levels for the game. Looking back, it was all fairly basic stuff, but to me it was as exciting as could be. That game ended up as *CJ's Elephant Antics*.

Still quite early in its development, David and Jon had contacted publishers about signing the game. Seeing the excellent early C64 version, as well



as knowing an Amiga port was also underway, we ended up considering two offers between Players and Codemasters. In the end, we all agreed to go with Codemasters. However, during those discussions I recall having a phone conversation with a programmer at Players, relating to potentially converting the Amiga game to Atari ST. That programmer was Paul Griffiths, someone I still occasionally cross paths with today, twenty-seven years later. Everyone will tell you how small the games industry is – it really is true!

We produced a couple of *CJ* games with Codemasters, and by the time David programmed *Spike In Transylvania* he

Nobby the Aardvark on the hunt for Antopia and a good lunch on the C64. *Nobby* was supposed to upgrade to the Amiga, but when Thalamus Games went, so did Amiga *Nobby*.



had bought an Amiga, so he coded that version himself. Several months were then poured into our next title, *Nobby The Aardvark* for Thalamus. Sadly, Newsfield and Thalamus went into administration during development, and in the aftermath I ended up moving to Codemasters in late 1992, resulting in the Amiga version of *Nobby* never being completed.

Just before that move to Codemasters, I took on a short freelance



project for them, producing a small prototype of an educational game featuring none other than Dizzy! Philip and Andrew Oliver say they don't even remember this, but in reality it didn't get very far.

At this point, I was mostly working on Sega Mega Drive projects for Codemasters. But even then, the Amiga played a huge part. Half of us there at the time were Amiga fans and used A4000 systems for Mega Drive work. Using a mix of hand-built and commercial tools (including *DevPac* for assembling code), a number of Codies'

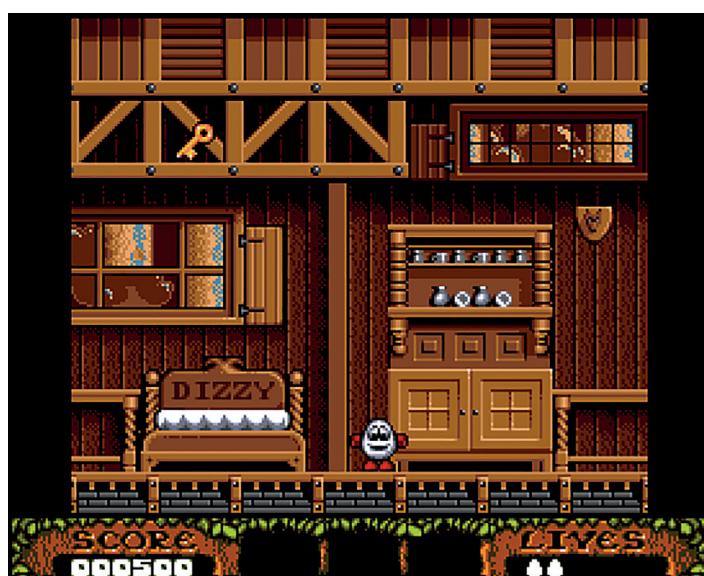


big Sega hits were produced on Amiga, including *Micro Machines* and *Fantastic Dizzy*.

By the mid-1990s, the mighty Commodore had fallen, and the very respectable and reborn Windows 95 meant that serious development moved away from Amiga to PC. For me, that was a sad time, and I always looked back on the Amiga period as golden years. I still do. Amiga kickstarted my games development career, and I'll always be truly grateful for that. 🎉

Above: Vikings in Draculaland – Ash is credited with the music and sound for *Spike in Transylvania*.

Fantastic Dizzy, left and below, was developed on the Amiga 4000.





Stoo Cambridge

Joining the Sensible camp meant that Stoo produced the graphics for some of the best known and fondly remembered games on the Amiga – namely *Sensible Soccer* and *Cannon Fodder*. A couple of great titles to have on your CV!

The 1980s, what fond memories I have of this amazing decade. To experience first-hand new computer technologies and witness the emerging development of the home computer games industry is something I'll never forget. It's only in recent years I've truly realised how it played such a major part in shaping my life and my career choice.

My first computer was a Commodore VIC-20, a machine my parents bought me to help with my homework (and the occasional bit of gaming). I don't remember using it much for maths but I do remember playing to death the early Llamasoft titles like *Abductor* and *Lazer Zone*; did anyone use them for homework? It wasn't long before I started to learn more about the technical aspects of how these machines worked and 'got into' computers like many of my generation did at that time.

It was Christmas 1985 when I progressed from the basic delights of the VIC-20 to the awesome C128 – what a great present from my parents. With it I taught myself 6502 assembler and it wasn't long before I was writing

sprite and scrolling demos, but it was the decision to hack a *SEUCK* game I'd created, *Battle Ball*, that led me to dip a toe into the industry. To my surprise budget game publisher Power House offered to release it on their £1.99 label – so who was I to argue? The timing of this deal was spot-on, as I didn't have enough money to buy an Amiga, but with the advance on royalties from *Battle Ball* I could finally afford one.



UK stock of the Amiga A1000 was in somewhat short supply so my dad drove me to a computer shop in Huntingdon that still had some; all my Christmases had indeed come at once!

Unfortunately even though I'd signed a deal to get my game published Power House went under before it had even

Battle Ball, a 1988 C64 shoot 'em up against a world defence computer gone crazy – it never made retail when Power House went under. It's available for download from GTW64 (gamedthatwerent.com).

reached the duplicators – I was out in the cold. My foray into the games industry was over before it had begun and with the new 16-bit machines emerging I made the decision to concentrate on the art side of games development. I'd like to say I had this grand plan and it was carefully orchestrated but of course that would be a work of fiction; the truth is far less grandiose. The reality... well there was no plan, I just spent all the time I could learning, using, and experimenting with the Amiga and *Deluxe Paint*.

During the early 16-bit days I strived to create proper arcade quality graphics like those seen in the machines of the time. Being an avid fan of coin-op games I would often visit the arcades along Southend seafront analysing the graphics with a clinical eye, observing what they looked like and analysing how many colours they used. Before the Amiga, achieving anything close to arcade-level graphics was a pipe dream, but I could see with the Amiga's 4096 colours the 'arcade look' could now be represented in the home. So that's what I did and built up a small portfolio of artwork.

I showed my efforts to a few people and it wasn't long before I got my first graphics job working for the publisher Impressions. The first game I worked on, *Renaissance-1*, was a generic collection of four classic arcade games. It was nothing fancy but that didn't really bother me. I was grateful for the opportunity and I always did my best when creating the artwork. Impressions, pleased with what I



had done, offered me subsequent projects. To quote Kevin Flynn at the start of *Tron: Legacy*, 'I got in!'

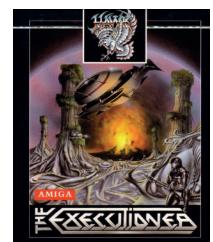
During the next couple of years I worked on a few titles of varying genres, but one that stood out to me was a bizarre *Gravitar*-style game called *The Executioner*. I was into HR Giger quite heavily at the time and this can be seen

"I saw the job ad from Sensible Software. I can't believe I actually hesitated to send in my application..."

in the look and feel of the game. This was the first project I'd worked on that took many months of development and required lots of artwork – previous titles



Renaissance-1 was a mix of arcade gameplay – *Asteroids*-cum-*Space Invaders* – rolled up into one package.



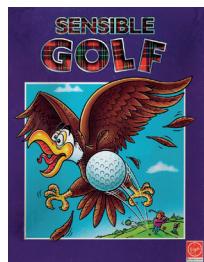
Graphics influenced by Swiss artist HR Giger added an uneasy feel to *The Executioner*, which was little more than a simple side-scrolling shoot 'em up.

Based on the Driving Theory slogan 'MSM' (mirror-signal-maneuvre) *Mirror Signal Manslaughter* was never going to be a serious – let alone sensible – game.



had taken far less time to do. The game looked great but – crazily – we omitted keyboard controls. To this day I can't believe we left that out in favour of a joystick-only control system and it's no wonder that was the main criticism raised in magazine reviews.

The magazines back then were more popular than today and along with the regular monthly publications there were a few that came out weekly. These periodicals often had games-related jobs sections near the back and I kept my eye

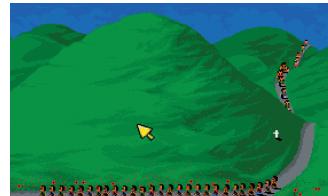
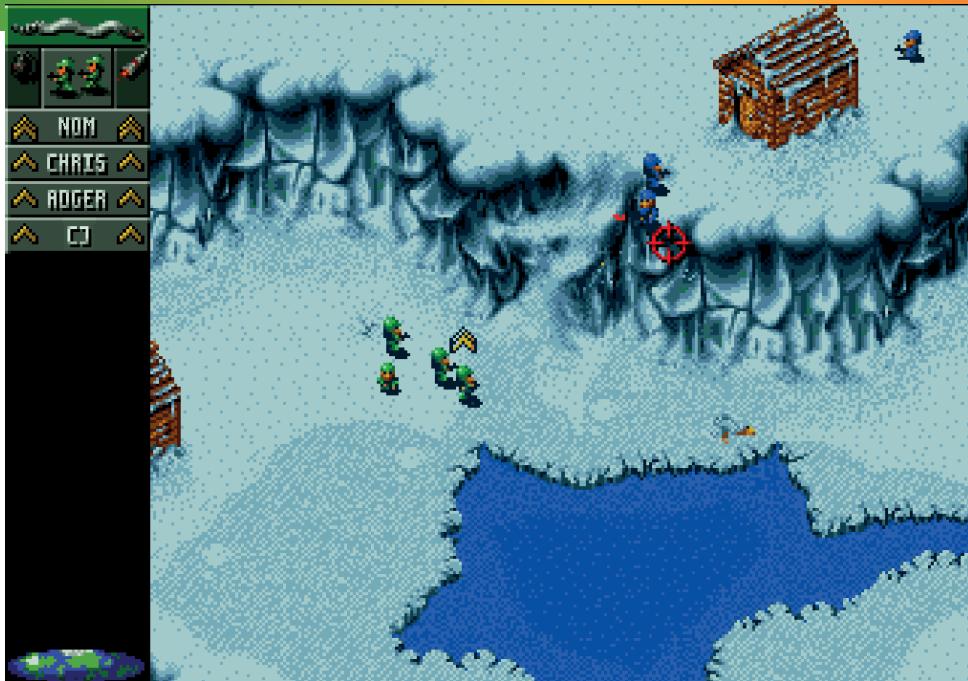


Sensible Golf never hit the dizzying heights of success as its older *Sensible Soccer* sibling and, as the packaging suggests, this was less a simulation than a fun practice session.

on them. It was in one of the weeklies that I saw the job ad from Sensible Software. I can't believe I actually hesitated to send in my application, but I did. Crazy right? Thankfully I convinced myself that I had nothing to lose, so I put together a portfolio disk and sent it off to Jon [Hare] and Chris [Yates]. What happened thereafter was indeed a life changer! I got in...again!

I hit the ground running and soon settled in, initially working on a few small bits and conceptual pieces like *Sim Brick*,





Classic wargame fun... just don't become *Cannon Fodder* and end up as another poppy.

Mirror Signal Manslaughter and *Sensible Startest* before starting on *Cannon Fodder*. I had absolutely no idea the game would achieve such huge success and still be remembered so fondly today.

The graphics for *Cannon Fodder* were mostly done on my Amiga 500, as was pretty much everything else I did at Sensible. I bought an A1200 later for home use and I did the Atari Jaguar version of *Sensible Soccer*, which was awesome because the AGA chipset was lovely – pure digital magic!

In comparison to the PC the Amiga was friendly, powerful and offered a real sense of creative freedom. Even using it for console graphics work was just brilliant. The 256-colour mode was spot on for doing Sega Mega Drive and Super Nintendo graphics. I just wish it had lasted longer and had evolved sooner, for it really was gone too soon.

Looking back I had absolutely no



A Sensible Software Game



Would you trust the word of any of these recruiters? The Sensible Software developers, ready to throw you into battle at the drop of a hat. As the mortality counter increments and the casualties pile up, survivors are rewarded with a fast promotion, and only the brave (read: 'lucky') get to the end.

idea a computer like this would change my life so dramatically and leave such fond memories. I guess it had that effect on many people. Long live Amiga! 



The Oliver Twins

The most prolific of game creators, and famous for their Amstrad, Spectrum and Commodore 64 games featuring the eggcellent Dizzy, Philip and Andrew's 8-bit hit games were converted to 16-bit and became just as big hits on the Amiga.

The Amiga 500 launch was an exciting time in the industry and many gamers were keen to own one, and while many of the leading developers upgraded we didn't. It was expensive at £499 and as such took a while to drop in price and find its way into average income family homes.

As new technology it was impressive and promised more CPU power for controlling more characters in games, and the resolution, the colours and the ability to move large sprites around the screen effortlessly was amazing. We liked

the power of it and the possibility for far better games, but we'd just got into the flow of writing Amstrad and Spectrum games. We were able to write games in about a month that would go on to become best sellers, so it was daunting to consider restarting the learning and rebuilding our development pipeline. Also we were still doing most of our in-game graphics ourselves and we'd have to find an artist if we were to do justice to our games on the Amiga.

Obviously when a new piece of gaming hardware comes out, it's



Advanced Ski Simulator – take a tumble down the icy Alpine slopes.



expensive and the early adopters are core gamers and the kind of games we were writing were not what they were looking for. We had specialised in mass market, bright and friendly budget games. It would be several years and several million sales of the Amiga before it became mass market enough for our games to start being converted and enhanced for the computer. The first was *Treasure Island Dizzy* in August 1989 by brothers Andrew and Robbie Graham.

Around this time we had decided it was time to move on from the Amstrad and Spectrum as they were coming to the end of their lives and we were still unsure if we should move to the Amiga, which would require hiring an artist. While contemplating the future we visited the Consumer Electronics Show in Las Vegas and saw the massive potential for games on consoles,



particularly the Nintendo Entertainment System (NES). Nintendo was selling high price 8-bit games in their millions, games we felt we could easily write. The style of what was popular really suited the style of games we enjoyed making. Everything, except the politics of writing NES games, felt right and we decided to switch from Spectrum and Amstrad to the NES, rather than the Amiga. Over the next few years we wrote thirteen games on the NES while other UK



Above: in a switch from the usual arcade adventure of the Dizzy games, *Bubble Dizzy* is a simple action game, brought to illuminated underwater life in the Amiga graphics.



What! No Dizzy?
In *Firehawk* the president of the United States demands the rescue of agents and the destruction of drug factories.



Is that a burger beside the fountain? When Dizzy gets hungry there's always *Fast Food*, which made it to the Amiga in a blaze of colour.

developers around us worked on the Amiga and Atari ST. But our brush with Amiga was just about to start.

We moved into Codemasters offices – well portacabins – and artists were all using *Deluxe Paint 3* on Amigas for creating graphics. As a result we retooled our pipeline so that all our NES game graphics were developed on Amiga, and for relaxation we'd often play *Lemmings*, and then later *Worms* on our A500s.

Meanwhile, Codemasters was riding high in the UK popularity stakes. Our games alone, accounted for over 15% of all sales. As a result the Codemasters production team was busy finding developers to convert our games to all platforms including the Amiga.

They were very successful in the number of conversions, quality and sales of our games. A total of thirteen were converted and released on Amiga, a large number being *Dizzy* games. It's probably true to say that *Dizzy* was one of, if not the most, successful game characters on the Amiga, and for that we are very

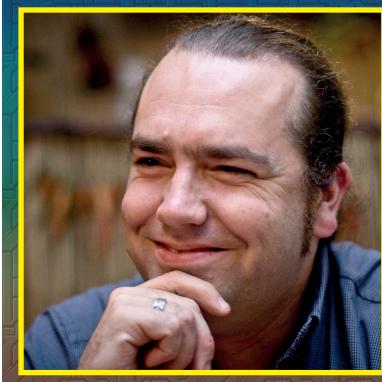
grateful to all the talented developers who created those games. Most of them are still in the industry today.

While many will remember and celebrate the great games on the Amiga, probably its best legacy is the number of people who were inspired by it and have their whole careers to thank Commodore for, as it was the Amiga that was the first computer for so many of today's best and most talented game developers.



Pirates and deadly creatures face Dizzy in the Amiga version of *Crystal Kingdom Dizzy*.





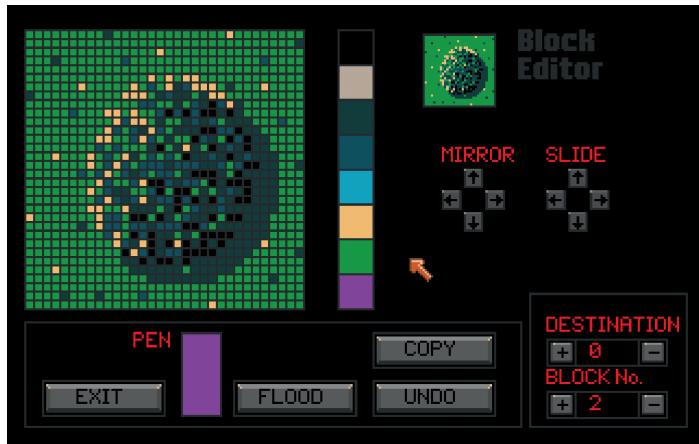
Jon Hare

Although Sensible Software made a name as developers with Commodore 64 classics such as *Wizball*, it was in the era of the Amiga that they achieved greatness with a series of massive hits such as *Sensible Soccer* and *Cannon Fodder*.

What can I say about this amazing machine that has permanently transformed my life?

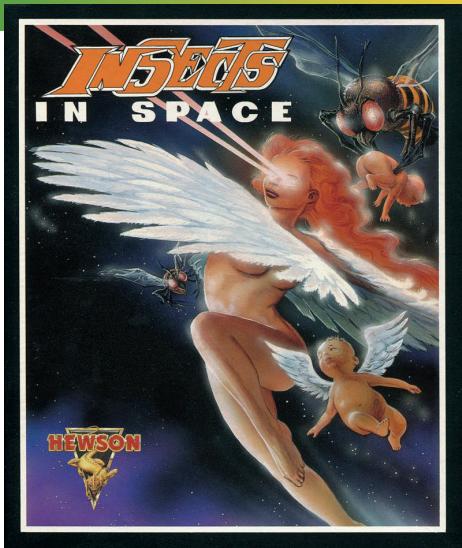
Without the Amiga I would probably be doing something very different from still developing games today. Despite the fact that at Sensible Software we had already had a couple of number one games prior to the arrival of the Amiga in our lives we were still nowhere near what you could call rich. We were doing okay, it was 1989 and we were just finishing off *International 3D Tennis* on the Commodore 64, which had thus far been the machine from which our then current success as a cult British developer was starting to shape up.

Shoot 'Em Up Construction Kit, sprite editor **below** and block editor on the **right** (select a block to edit).



A few months previously we had seen two of our games converted out of house onto the Amiga. *Shoot 'Em Up Construction Kit*, which had been our first ever chart topper, published by Palace Software, had been converted by none other than Richard Leinfellner, who went on to become someone quite important at EA. The second, *Insects in Space*, was converted by a team put together by publisher Hewson Consultants. Neither conversion had rocked the world too much and in my opinion neither was as good as the original Commodore 64 versions. So with *International 3D Tennis* we decided to take the conversion in-house and hire someone new for the job; none other than Dave 'Ubik' Korn, in those days a





student at Cambridge University, which was up the road from our office.

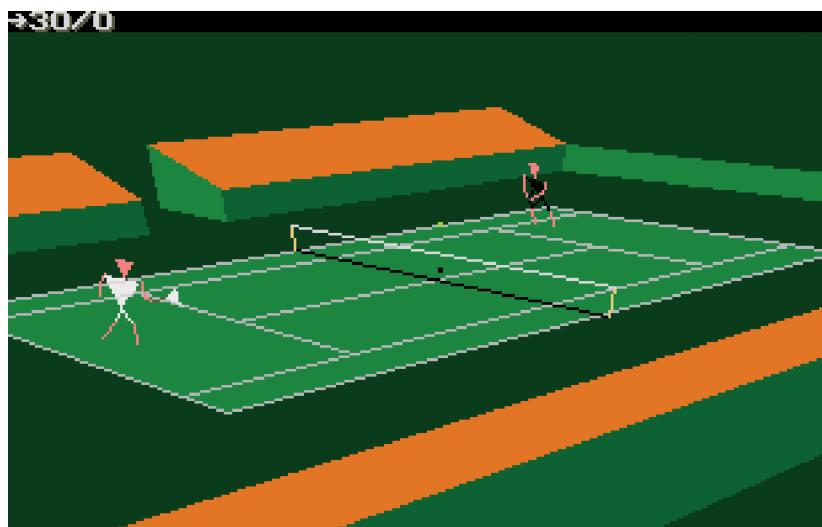
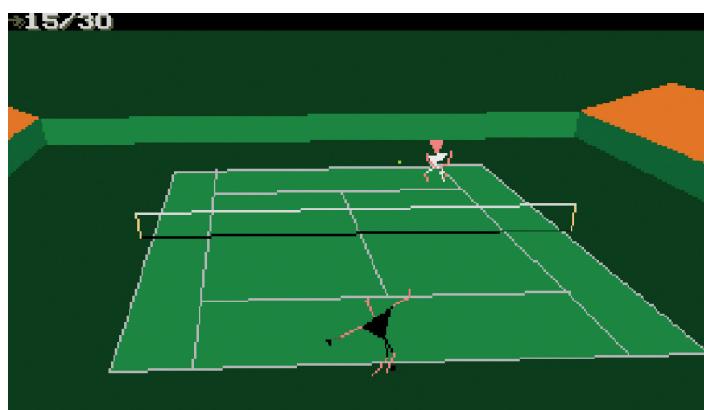
Dave had previously written *Thrust II* on the C64, among other things, within which he had grappled with the unenviable task of making the SID chip sound like his hero Jimi Hendrix. So perhaps the polite applause of the Wimbledon crowd may have seemed like an odd place for this natural born hellraiser to have been applying his talents, but we were very happy with his work and *International 3D Tennis* was the first Amiga game bearing the Sensible name of which we really felt proud.

However Dave was not the first Amiga coder we had signed up, even though his game was first out the door. In fact the Sensible potted history of the Amiga prior to Ubik's arrival went something like this: Play *Defender of the Crown*, play *Shadow of the Beast*, convert *SEUCK*, convert *Insects in Space*, hire Chris Chapman. Chris Chapman was another Cambridge programmer who made non-games applications and

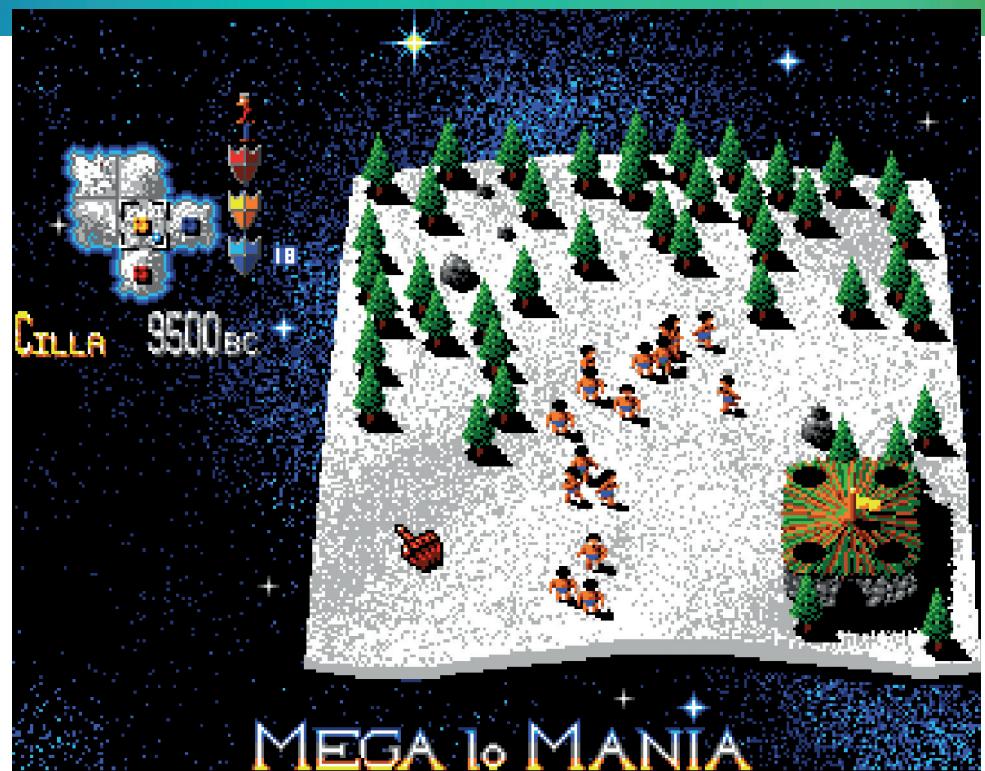
had just finished running a two-man company with a friend. He was looking for some consulting work and we were looking for a competent programmer to join our team and lead the charge on our next game.

At the time Chris joined Sensible Software the company was just three people: myself, art and design; my partner Chris Yates, programming and design; Martin Galway, top C64 games musician and part time programmer for Sensible who was just about to leave for a new life in the United States. Chris Chapman fitted in to the set up instantly

With its multiple viewing angles, *International 3D Tennis* was the first Amiga title completely by Sensible.



Heading for the 'Mother of all Battles', 1991's *Mega lo Mania* established Sensible's small-sprites-and-maps trademark style in their first 16-bit-only game – the premise wasn't all that sensible though.



and it was with him that I started to craft Sensible's first proper, 16-bit only, game on the Amiga...that game was *Mega lo Mania*.

What was amazing about the Amiga was how much it allowed us to do compared to the C64 that we had worked on previously. The graphics alone gave us so much to play with and

"The extra resolution of the Amiga enabled a trademark graphic style with small sprites on map-like backgrounds."

as the only artist in the company at the time I really enjoyed it, although it did increase the workload somewhat from what I was used to. The memory size meant we could start to plan bigger worlds to include in our games, which had previously been inspired mostly

by emulating arcade machines within the tight memory confines of a C64. Added to this potential was the amazing acquisition, via Palace Software, of musician and sound man Richard Joseph. Everything Martin was to the C64, Richard was to the Amiga – he was a proper sound genius.

For *International 3D Tennis* Richard added BBC-style Wimbledon Music and real tennis commentary in an era when speech in games was almost unknown. For *Mega lo Mania* he stepped up his game further by adding a series of three memorable tunes for the game's intro sequence, menus and in-game music based on *Mars, The Bringer of War* by Gustav Holst, plus the most memorable speech in any Sensible game with gems such as 'Do you want to be on my team' and 'the design is ready' in a variety of voices



adding real character to the games in a way that was previously impossible to do.

In terms of the gameplay, *Mega lo Mania* morphed from a game about flying spaceships and managing land and space stations into one of the first ever real-time strategy (RTS) games, with the world's first ever tech tree pitting cavemen against WWI pilots and Victorians with muskets against nuclear weapons. The variety of graphical detail needed to show this kind of gameplay was simply not possible on any of the 8-bit home computers.

Meanwhile Chris Yates and I had embarked upon a follow-up to *Wizball*, called *Wizkid* this was a psychedelic mishmash of numerous game styles built loosely around an *Arkanoid* clone and a platform adventure game. Recently voted No.4 Amiga game of all time in yet another online poll, with its crazy style *Wizkid* has been a slow-

burning favourite over the years that was not reflected at the time in Ocean's sales figures. However *Wizkid* was so long in development, due to Chris Yates' numerous other technical roles in all of our other titles, that Chris Chapman and I had time to work on a follow up to another one of our C64 hits: *Microprose Soccer*. This game would go on to be our best-selling game of all time; a perennial chart topper in best-ever Amiga games

Wizkid: The Story of Wizball II, with a riot of colour, made a great follow-up on the Amiga to the Commodore 64's popular *Wizball* for Ocean.



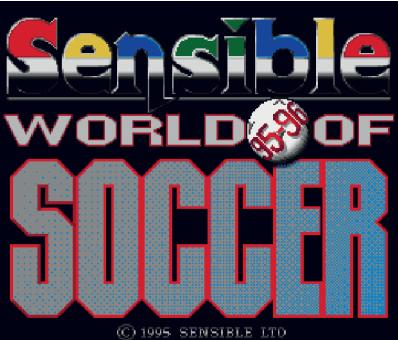
lists... it was of course *Sensible Soccer*.

Chris and I had simply taken the little *Mega lo Mania* men and dressed them up in football kits, let them run around a football pitch drawn in *Mega lo Mania* perspective, added some nice controls, and we had an instant hit on

our hands. We all knew it in our office from the moment *Sensible Soccer* was first played. It was special. Initially released in June 1992, it went on to be converted to numerous platforms and had many versions

on the Amiga, including *Sensible World of Soccer*, the only Amiga game to be inaugurated into the 2006 Stanford University list of the ten most influential games of all time.

The extra resolution of the Amiga enabled us to find a trademark graphic style with small sprites on zoomed out map-like backgrounds, allowing much



Football simulation and strategy games came of age on the Amiga with *Sensible World of Soccer*.

Below: Choosing tactics.

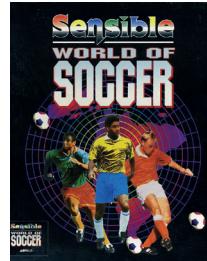


more strategic play, and this was also carried through onto our next title.

For *Cannon Fodder* the code and art were by newcomers to our team Julian 'Jools' Jameson and Stoo Cambridge. It was the six-man team of myself, Chris Yates, Chris Chapman, Ubik, Stoo and Jools with the addition of Richard Joseph that would go on to be the classic Sensible Software Amiga team. Between us we produced five No.1 Amiga games and topped the UK charts for an incredible fifty-two weeks between June 1992–May 1995.

Richard Joseph and I worked on a reggae song, 'War Has Never Been So Much Fun', written as the title song for *Cannon Fodder*. It was the first computer game to have a proper sung title, and we also made a silly pop video of the team running around to it which featured on some versions of the game.

Our run of Amiga games from 1991–1994 went: *Mega lo Mania*, *Sensible Soccer*, *Wizkid*, *Cannon Fodder*, *Sensible World of Soccer*, *Cannon Fodder 2*, *Sensible Golf*. It isn't any wonder we were sad to see the end of this amazing machine. The Amiga cemented our reputations as game makers and it made us a lot of money. But more than that it had been so much fun to work with, in a small committed team, on a totally free platform, with excellent support from many British publishers who all paid us advances during development and increasingly good royalty rates at a time when three new games a day were



published. That might seem a lot, but in retrospect it was just about perfect and infinitely preferable to a thousand mobile games appearing every day twenty years on. The average quality and innovation of all games was a lot higher in those days and by and large Amiga fans were far more experimental and dare I say ‘intelligent’ than the masses of console and smartphone gamers who were about to follow.

By 1995, I believe we were the No.1 Amiga developer in the world – certainly in Europe – but all good things must come to an end and we were being offered four times as much money per game to move from the Amiga to new machines like Playstation and PCs with 3D capability. Little were we to know that the two years more we spent staying

focused on the Amiga and 2D graphics would cost us dear when we moved up to the next-generation machines. But I would not swap it for the world. The Amiga is, and will always be, my favourite games machine. It has a place in my heart for ever. 

Cannon Fodder – war’s never been so much fun.





Peter Johnson

Responsible for converting many an Ocean and Imagine game to the BBC Micro, Peter took those skills along to the 16-bit world and continued to port across many of the biggest titles of the day to the Amiga.

My career in games started in 1982, releasing games for the BBC Micro through Superior Software, with a version of the *Q*bert* arcade game.

After a few years producing successful arcade conversions for Superior, I

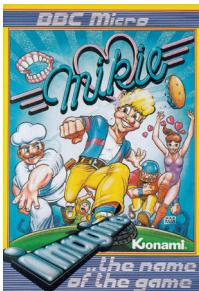
saw the way the market was moving towards licensing, and moved to Ocean. The company was

releasing official conversions of arcade games on the Imagine label (for whom I wrote *Yie Ar Kung Fu* and its sequel, and *Mikie*), and conversions of computer games through US Gold (*Crystal Castles*, *Impossible Mission*, *Beach Head*.)

These games were all written from my home in Newcastle-upon-Tyne in



Mikie – conversion of the arcade hit to the BBC Micro.

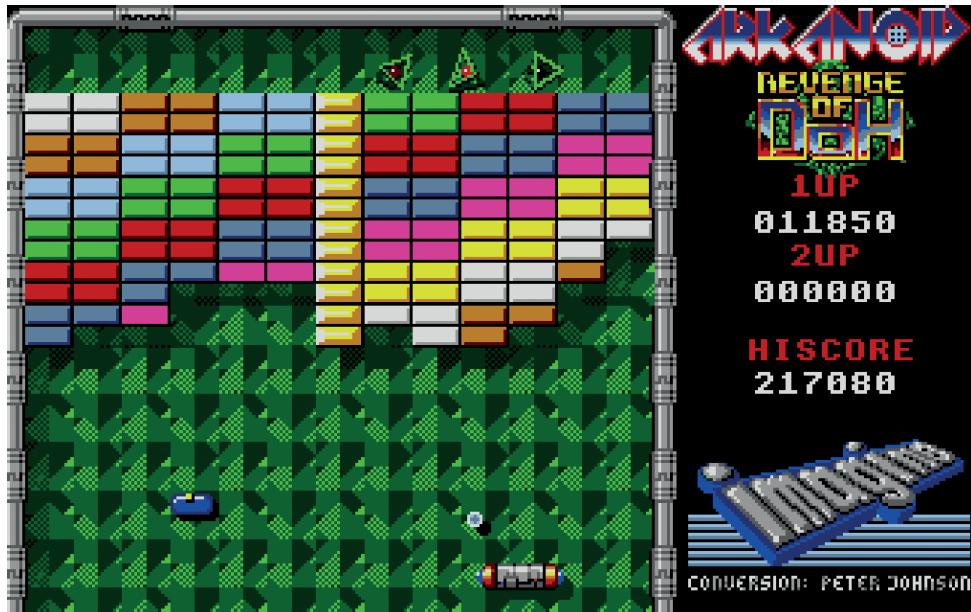


the native machine language for each platform, and I handled all the coding, graphics and sound myself with little involvement from Ocean. I just handed over the game when it was complete. There wasn't much to-ing and fro-ing for bug testing or difficulty tuning; often the first completed version I sent would be the finished master.

I was self-employed, agreeing a flat fee for each game at the start, paid on completion. Typically I went to Manchester after a game was finished to get agreement on what the next game should be, sometimes picking it from arcade machines Ocean had in the basement.

Arkanoid was my first 16-bit title, for the Atari ST. This was soon after the ST's launch when its sales were well ahead of the Amiga – you could attach the ST to a monitor or tv, whereas the Amiga required a very expensive multisync monitor in the UK. An Amiga version of that game was therefore not really on the cards for Ocean (Discovery Software wrote an Amiga version in the US, which I thought was great). The ST





Arkanoid: Revenge of Doh – an excellent conversion of this *Breakout* arcade clone.

game was reviewed really well, as there were few good arcade conversions for the machine at the time, and the mouse worked well as an input method.

With the release of the A500 in the UK, the Amiga had a shot at the mainstream, so the next game was written for both ST and Amiga, a conversion of Sensible Software's *Wizball* from the Commodore 64. This was converted by playing the game on a C64, and viewing the video of a full playthrough but, as with most of my other projects, I had none of the original artwork or code to work from, it all had to be recreated.

Since it was taking a while for the Amiga to build market share in the UK, Ocean was only interested in the next game, *Arkanoid: Revenge of Doh*, for ST. Ocean supplied a suitcase arcade machine for the conversion, which crammed a genuine arcade board

and JAMMA[†] interface into an attache case, along with an arcade controller and RGB video output, which I viewed using the monitor from an old Amstrad CPC 6128.

After I'd completed the ST version, I contacted Discovery in the US, to see if they would be interested in it for Amiga. When I told Ocean about this, they agreed to release it for Amiga as well.

“Music has always been a strong passion of mine, and I had a well-equipped 8-track studio at home...”

My last Amiga game for Ocean was *RoboCop*, which Ocean signed at the script stage, and then licensed an arcade game to Data East, so I combined their version (from a suitcase again) with some extra elements from the Spectrum version, such as the shooting gallery and photofit stages.

[†]The Japan Amusement Machine and Marketing Association, the standard for arcade games at the time.

This is one of the few games where I didn't create the graphics from scratch,



On a wing and a prayer, Ocean went ahead with *RoboCop* and it became the most successful movie licence in the catalogue. **Below:** Beware the perp above.

as I took the monochrome Spectrum animation frames and drew over them in *Deluxe Paint* to create colour artwork. The photofit stage of the game includes digitised parts of many faces from the

Ocean team. I created the loading screen by digitising a movie advert (from *Empire* magazine) with a camera and a black and white ST digitiser, then tinted it by hand to match the original.

In retrospect, I wish that I had altered these Amiga ports more from the ST versions, as they were very much straight ports, without taking full advantage of the Amiga's hardware features like fullscreen scrolling, or tracker-based music.

Music has always been a strong passion of mine, and I had a well-equipped 8-track studio at home, so when I received interest to create soundtrack music for a video from a film director friend (Paul WS Anderson, who later wrote and directed *Event Horizon*,



Mortal Kombat and *Resident Evil*), I did that, then took a few years out as a composer and producer – writing music for local TV, and soundtracks for a few commercial videos.

During this period I remember approaching Psygnosis to suggest I combine these disciplines to write full music soundtracks for their games to play from the CD included on the new CD32, and sent them a demo of some music from *Shadow of the Beast* with a full arrangement. They passed, saying they wanted to use the CD for loading, and more graphics, and thought that 3-channel sound was fine at the time.

My last Amiga game was *Morph/Metamorphosis* in 1993 and was influenced by the console games I was playing at the time. It was one of the few game designs I created myself. It looked like an arcade game but was actually a puzzler where you had a limited number of switches between four physical states of matter, transforming from a solid cannonball (destruction) to a rubber ball (bouncing high) a liquid (slip down through drains) and a gas (rise up, and pass through grilles) to navigate from one end of a level to the other. Flair Software supplied the graphics. After completing a Mega Drive conversion, I moved on to coding for Atari Jaguar.

I managed the Newcastle studios for Rage Games for nine years (*Expendable*,



Rocky) then Venom Games for another five, who we sold to Take 2/2K, and a brief stint producing at Eutechnyx. During all of that time I did little or no programming.

In 2010, after over fifteen years away from programming, I returned to coding, graphics and design, teaching myself to code in high-level languages, and writing apps for iOS, including *MailShot*, a group email app which now has over 250,000 users, and *ShotList*, an app for scheduling and tracking a movie or video production on mobile. 

Morph – not to be confused with Tony Hart's best mate – in his liquid state, **top**, Morph can squeeze into tight places (the other three states are solid, gaseous and rubber); **above**: the area selection screen.



Gari Biasillo

Gari composed the *Target: Renegade* track on the Commodore 64 and when the Amiga took over from its older brother, he provided musical scores for a number of Hewson Consultants' titles.

I can say without doubt that seeing the Commodore Amiga first-hand was an awe-inspiring moment. A young boy, still at school, I ventured to London to attend my first computer exhibition. As an owner of my beloved C64, I had only heard of the Amiga 1000 through the many computer magazines that filled the shelves of many newsstands during that era. With great anticipation, I raced around the show floor in search of Commodore's new, and in my eyes, super computer. A large crowd gathered around the Commodore booth signified something special. And it certainly was. Seeing the legendary bouncing ball demo was a sight for sore eyes.

My first taste of developing anything

for the Amiga was way back in 1987 when I joined Interceptor Micro's, based in Aldermaston. At the time, they were finishing up on the Amiga and Atari ST versions of their popular game *Into The Eagle's Nest* and needed music for the title screen. They had no music software and it was less than a working week in hand before the game went to duplication. With this tight deadline, I came up with the plan to simply compose the music on synthesizers, sample it, and play it back on the computers. Interceptor also lacked any music equipment, so off we went to the local music store. From what I recall, they had a wide selection of synths but given the limited budget, it was a toss up

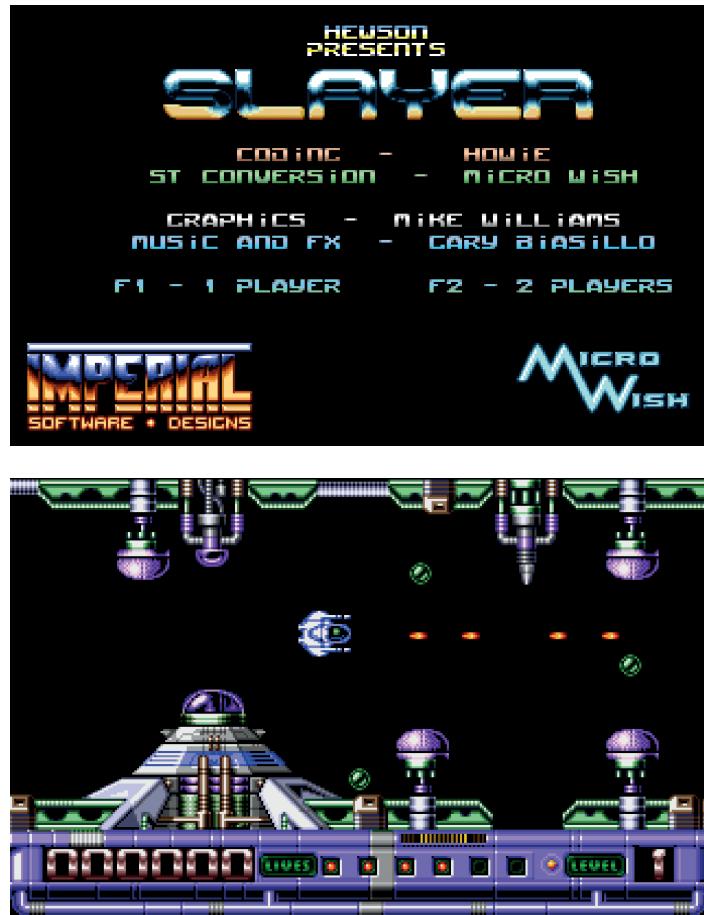
In just a week, Gari knocked out a musical score for the title screen of the 1987 Interceptor release *Into The Eagle's Nest*.



between a Yamaha DX21 and a Casio – the model I forgot. As the Casio was multitimbral, had drums and an onboard sequencer, I begrudgingly chose this. To be frank, I have never been keen on the sonic qualities of FM synthesis. Not that the Casio sounded any better, and the sequencer was a nightmare to use and I couldn't get it to sync the tracks in time. Thankfully, I never had to use that keyboard again.

Dabbling with three dimensions

It wasn't until the release of the A500 that I was able to afford my own Amiga. I had recently left Ocean Software to start up my own company, Imperial Software Designs, with Mike Williams, an old friend. We were still developing games for the C64 but spent a healthy amount of time learning the Amiga, using the trusty *Amiga Hardware Reference Manual*. My music software of choice was *Dr T's Keyboard Controller Sequencer*, which was quirky and very programmer-centric.



Of course, I spent an equally unhealthy amount of time playing games on the A500. It's hard to pick favourites, but those I was particularly fond of and spent endless hours playing were Geoff Crammond's *Formula One Grand Prix*, the *Championship Manager* series, *Kick Off*, its offshoot *Player Manager*, and Ubisoft's *Zombi*.

During this period of developing games, I coded exclusively in assembly language. Using higher level languages, such as C,



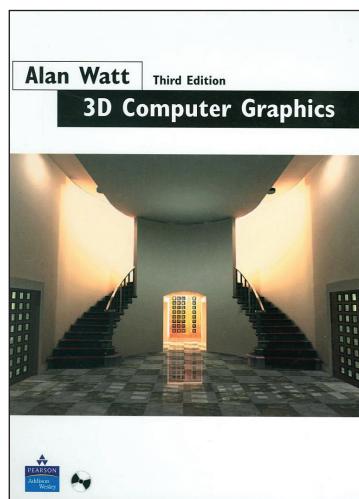
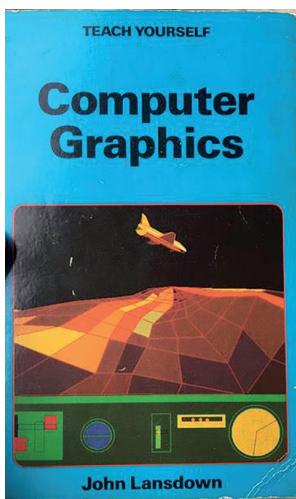
Above: *Slayer*, with Graphics by Mike Williams and music by Gari, both part of their own Imperial Software Designs; and **left**, *Future Basketball* developed by The Evil 3 for which Gari composed the music, both games published by Hewson Consultants.



Gari's first commercial 3D game on the Amiga, a port of the C64 game *Moonfall* for 21st Century Entertainment.



Two of the resources from which Gari taught himself 3D graphics – the John Lansdown is his own copy.



moving from the C64, I felt positively spoiled. And this was before even getting to the advances in graphics hardware.

My first dabbling into 3D programming was on the Amiga. My introduction was accelerated by Paul Hughes who provided me with a small demo he wrote to display a rotating wire-frame cube using the blitter line draw. It was short and sweet but gave me a good platform to start from.

Armed with that starting point, along with the book *Computer Graphics*, and later Alan Watt's *3D Computer Graphics*, Foley and Van Dam's *Computer Graphics*, and the collection of *Computer Graphics Gems*, I began exploring the exciting and creative new world of computer graphics. My first commercial 3D game release was the port of the C64 version of *Moonfall* to the Amiga and Atari ST, where I wrote a lot of the 3D framework for the solid polygon rendering. Interestingly, for rendering solid polygons, I found that using triangle left/right edgetables generated using a modified version of the Bresenham line algorithm to be faster than the hardware blitter line draw.

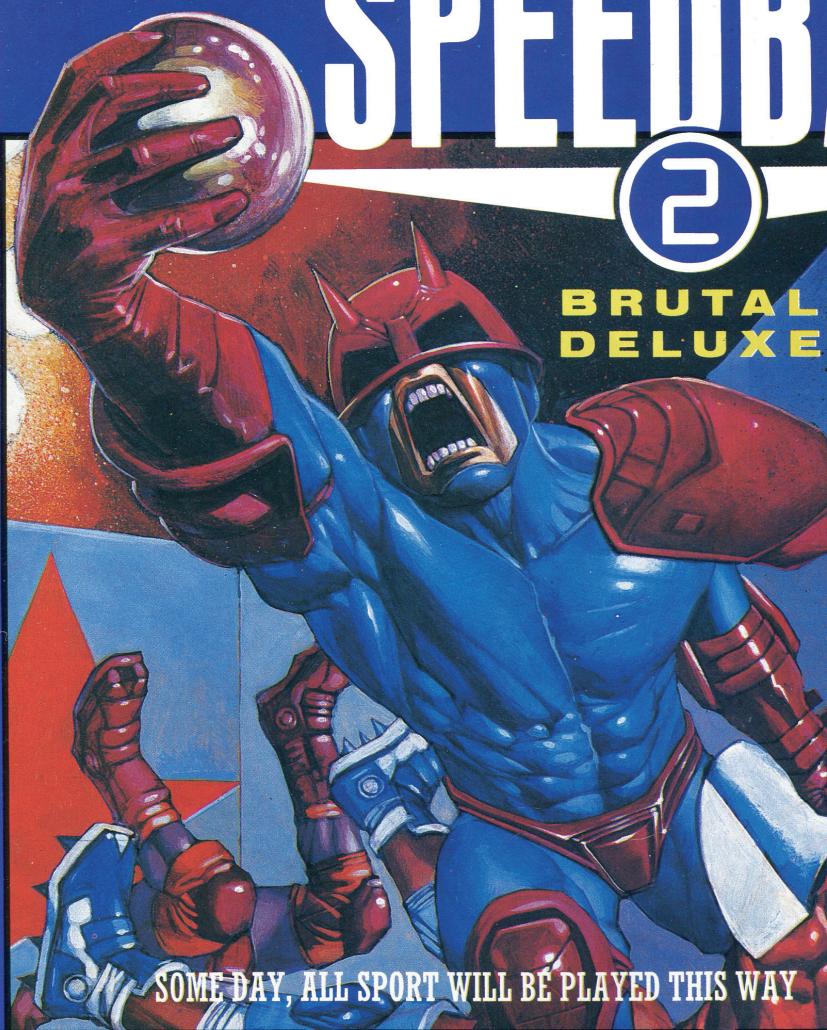
The arrival of the Japanese consoles along with the demise of Hewson Consultants, with whom we'd had a long term working relationship, meant that my time developing on the Amiga was short-lived. Along with the C64, the Commodore Amiga still holds a place in my heart.



SPEEDBALL

2

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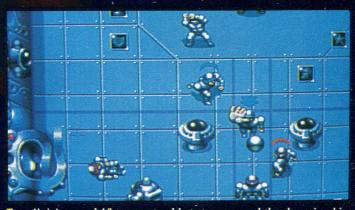
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AMIGA



Mark Knight (TDK)

Under the name TDK (The Dark Knight), Mark created hundreds of tunes, many of which were used on cracked game and demo disks. From his C64 and Amiga roots, he has gone on to create music and sound effects for a myriad of top-selling games.

Computers first grabbed my attention when I was ten years old, and having been given a second-hand Commodore 64 by my parents for my Birthday/Christmas I quickly took an interest in the sorts of sound it was able to create. The seed was sown. Step aside C64, and when I was sixteen it was time to say hello to a second-hand Amiga having had my mind blown by the Dr Awesome (Bjørn Lynne) demoscene track 'Tied Up' the same year.

I already had a very keen interest in music, from learning to play the violin to creating my GCSE music compositions on the C64, and I very quickly found

the *Soundtracker* music program to start getting noises out of the Amiga myself. While it was fun, my music wasn't good at the best of times, but I spent a lot of time watching and listening to demoscene releases, learning how things were done.

It wasn't long before I was meeting demoscene people at my secondary school, and I started writing in anger with the hope I could compose something which would be good enough to be released. That tune, if I remember correctly, was called 'Fractals 4', with '4' meaning it was the fourth completed track I had written – I didn't include all the crappy unfinished ideas.

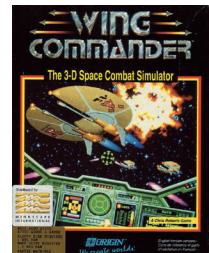
To be honest, my full-sized mods were never at the high echelon of many other Amiga composers, but having heard a load of chiptune modules most notably by 4-Mat, I fell in love with both this style, and the additional constraints, and quickly found I had a bit of a knack for creating these often less serious sounding tunes.

Soundtracker – the instrument of choice for Amiga musicians.

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Mark's first commercial work was to convert the music of Origin Systems' space combat simulator *Wing Commander* to the Amiga for Mindscape.



Many a college day was actually spent in my bedroom, once mum had gone to work, writing these tunes – suffice to say my A-Level grades were not what they should have been, but it was allowing me to 'hone my trade' as it were while I applied for work at recording studios after college.

I had already been turned down by Salford University to do a Music Technology Degree with them feeding back after my performance audition that a classically trained musician would not be able to deal with technology. I was sending Amiga disks to the various development companies in the UK. At the same time, my chiptune output was starting to get used within the cracking side of the scene on game intros.

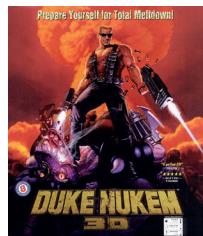
Nothing was coming through, so I started my application to go into management training at a well known supermarket. The day in 1992 I was

to send off my form, I received a call from Richard Leinfellner at Mindscape offering me some freelance work, converting the *Wing Commander* music for the Amiga. I snapped it up and when (almost) completed, he offered me a full-time position as in-house composer.

It could have been the shortest career in history when, during the first week, I heard one of my chiptunes playing in the production office. Mindscape had just released *Moonstone*, and had downloaded a copy from a BBS. I stuck my head around to see why they were playing my tune, and quickly saw that the crack intro introducing *Moonstone* was playing. I silently shuffled out, went back to my room, and shut the door very worried about the consequences of this.

To be fair, I had no control over what tune was used for what purpose, but I doubt very much that anyone else would have seen it like that. As it happens,

Check out Mark's website for his latest music and chiptune music at: www.flitkillsmoths.co.uk



Since 1992, Mark Knight has composed music and created audio effects for more than 35 titles across many platforms as varied as *Alfred Chicken*, *Populous: The Beginning* and *Duke Nukem*.

For Mindscape's 1998 *Warhammer: Dark Omen* Mark contributed the sound design, Windows and PlayStation versions.

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1. D/Generation 01:19
2. Building Peace Through Better Weapons 04:42
3. Derinda 0:25
4. Escape from Oblivion 05:29
5. Genog 01:59
6. Something's Nasty in the Pipes 04:08
7. Virtual Reality [Click to close](#)
8. Night Flight (Credits) 0:58
9. D/Generation (Remastered Amiga AGA Mix) 01:17

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I got away with it but I had to have a serious think about how my tunes would be used in the future.

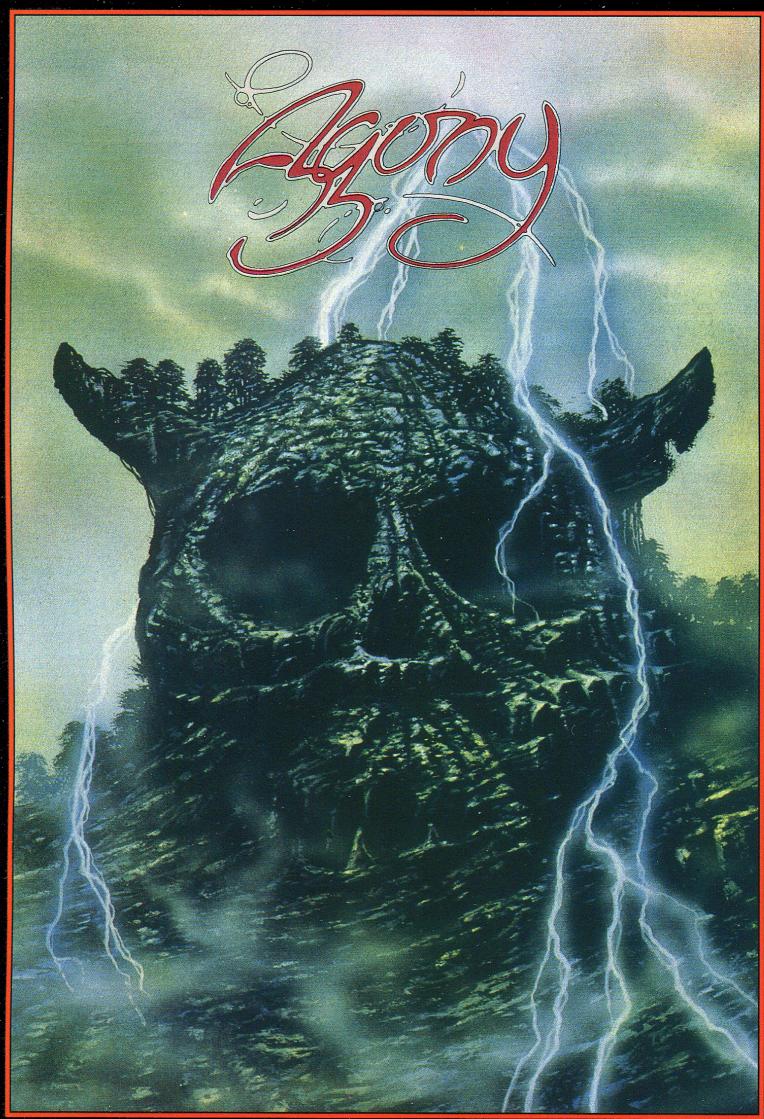
I soon found that as I was writing music all day I didn't have a need to do the same when I got home from work, so

a year later I retired from the demoscene to concentrate on game music and sound design.

We didn't release that many Amiga games at Mindscape – it was 1992 when I started, and the Playstation was looming. Had you asked me back when I first had an Amiga, I would never have dreamt that I'd actually be writing music for games. I'm now within my twenty-fifth year of working in the games business and although I stopped music composition full time in 1999, I had the opportunity to go back to it in 2014, and the smile is back...most of the time.

The Amiga, the demoscene, they will always hold a very special place in my heart, so much so, that I've recently got back into tracking with *Protracker*... when real life allows me the time.





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Phil Boag-Butcher (Galahad)

Phil's early days on the Amiga were linked more to 'hacking' than converting forgotten ST titles for the Commodore computer. Those skills have come into good use in converting such titles as *Putty* and *Starquake* that never originally appeared on the Amiga.

The irony is not lost on me, not even one little bit. My foray into delivering Atari ST ports to the Amiga is much less contentious now than it was back in the 1990s when Amiga owners were wholesale shortchanged by the flood of straight ports from the ST that frequently made no attempt to utilise the Amiga's more powerful capabilities at all.

On the whole the Atari ST did a lot of damage to the Amiga. Well, let's qualify that a little: the ST wasn't so

A small history lesson then.

The likes of Ocean Software and US Gold bought licensing rights to the latest arcade hits. Ocean then usually employed the likes of Teque to do their conversions and US Gold used the likes of...well, Tiertex.

But it wasn't just the Atari ST and the Amiga that were still of interest to publishers, even though the 8-bit machines were winding down they were still generating enough profit that

The Denton Designs classic for Ocean was released in 1987 for the Atari ST, Spectrum and DOS, but not for the Amiga... yet.



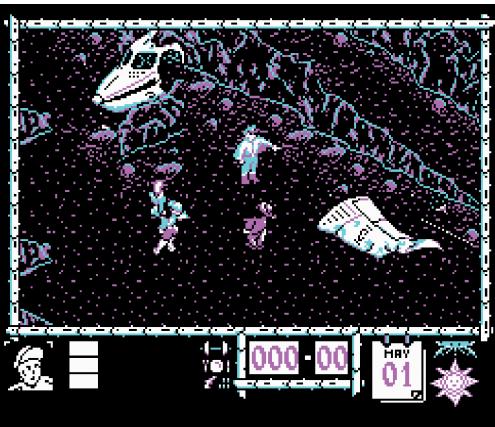
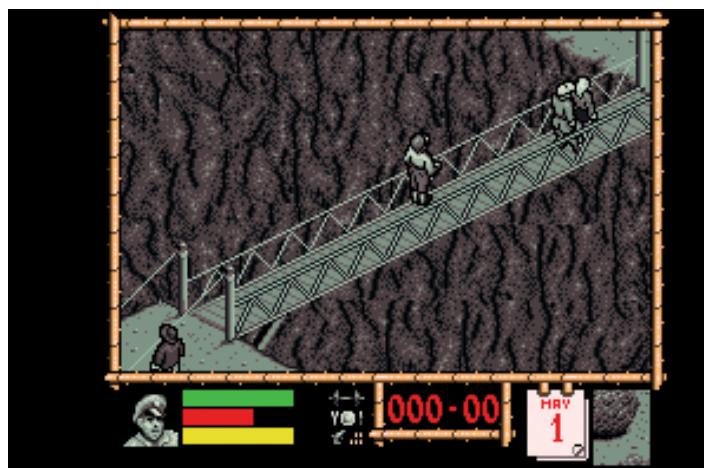
much to blame as was the British way of developing and publishing the software – that's what shortchanged Amiga owners and the ST simply made it that much easier.



conversions for those machines were a must. So: Spectrum, C64, Amstrad CPC464, Atari ST and Commodore Amiga – and then there might be additional releases on the likes of the

MSX, maybe even a DOS version as well as consoles like the NES and Master System (typically the last two were handled by others). And this is where the British system of developing and publishing betrayed Amiga owners. More often than not, the likes of Teque developed all six or seven versions of a title, and on tight deadlines.

The Amiga version was likely to be the last to be developed for the simple reason that the ST code could be converted in a matter of days to the Amiga. Maybe they would put in a few extras to jazz it up a little, or in the case of Tiertex, simply didn't bother. So hey presto the Amiga version was done and the publisher rejoiced in many versions for sale. Amiga owners looked at their screen and sighed as they tried to fathom why such a powerful machine consistently delivered underwhelming looking games.



Thankfully times changed as the Amiga started to become factored into software publishers' spreadsheets when sales grew and lower-cost machines appeared to attract more game players.

Games started to be written first for the Amiga, and then if the Atari ST was lucky enough, it might get a cut down version. Nevertheless, the Atari ST did get releases that the Amiga didn't. Some

Above: twenty-seven years after the initial Ocean release, Phil (as Galahad) put out the unofficial Amiga version of *Where Time Stood Still*, with a comic book style intro (Greyfox), and music by ADRDesign and Leatherhead.



System 3's *Putty Squad* was actually developed for the A1200 in 1994 and previews were sent to the gaming press, but it never materialised, seemingly because the bottom fell out of the 16-bit market. Finally, Phil persuaded System 3 to let him bring the original code up to date and *Putty Squad* was released in December 2013.

might argue that Amiga owners don't want ST games that were not published for the Amiga, but I disagree. It's not as if there's a plethora of new releases – the last time the Amiga was commercially viable for a software publisher was back in the late 1990s.

My history with the Amiga is a somewhat murky and illicit affair, cracking many a copy protection while also working in the software business for a while. But those skills also help me get ST games onto the Amiga.

Back in 2003 I researched games that never made it to the Amiga and one surprised me: *Super Sprint*, an arcade conversion that was pretty faithfully reproduced on the ST. My experience of the ST at this point was virtually nil. I'd owned one briefly before I got my Amiga back in 1988, but I didn't do anything meaningful with it other than play through the Power Pack of twenty games that came with the Atari.

In retrospect, from a coding perspective *Super Sprint* wasn't a great title to pick as a first conversion because it relied heavily on TOS calls to do virtually everything, which would have made it a long slog. And then as a single-player game it had not aged well; the AI for the computer cars was virtually non-existent. It always worked better as a multi-player game against real live people, just as it did in the arcades.

Super Cars 1 & 2, *Nitro* and a few other notables showed how *Super Sprint* was lacking, and the days of



major multiplayer battles on Amiga was probably long over. So it was with great reluctance that I eventually cancelled the project.

Zoom forward a few years and a Frenchman by the name of Meynaf – a man who is far more adept at all things Atari ST than I will likely ever be – stepped in and ported it. And what a fantastic job he did too. There was one issue, however, and that was the fact that it needed a 68020 processor and AGA for the palette reloading tricks the game employs. I had it in my mind that I wanted it to run on the A500 at an acceptable speed, as traditionally, it's the A500 that would have received the conversion had the software houses done it back in the day. Still, that's a small complaint really, because it comes down to entirely how the conversion is tackled



as to how fast it will be on the A500.

There are two ways of tackling a modern day Atari ST conversion to Amiga. One method is incredibly quick to get the game up and running but sacrifices game speed; the other method is quite time consuming but the end result is a game much closer to the speed it would have been had the Amiga had an official conversion.

In 1985, *Starquake* appeared on Spectrum, C64, Amstrad CPC, MSX, Atari 8-bit, the BBC Micro in 1987 and Atari ST and dos in 1988, but the Amiga version planned for 1991 never made it.

Above and below:
Starquake, finally ported to the Amiga with Steve Crow's blessing.





Ranarama – Gauntlet-style adventuring brought across to the Amiga by Phil and friends.

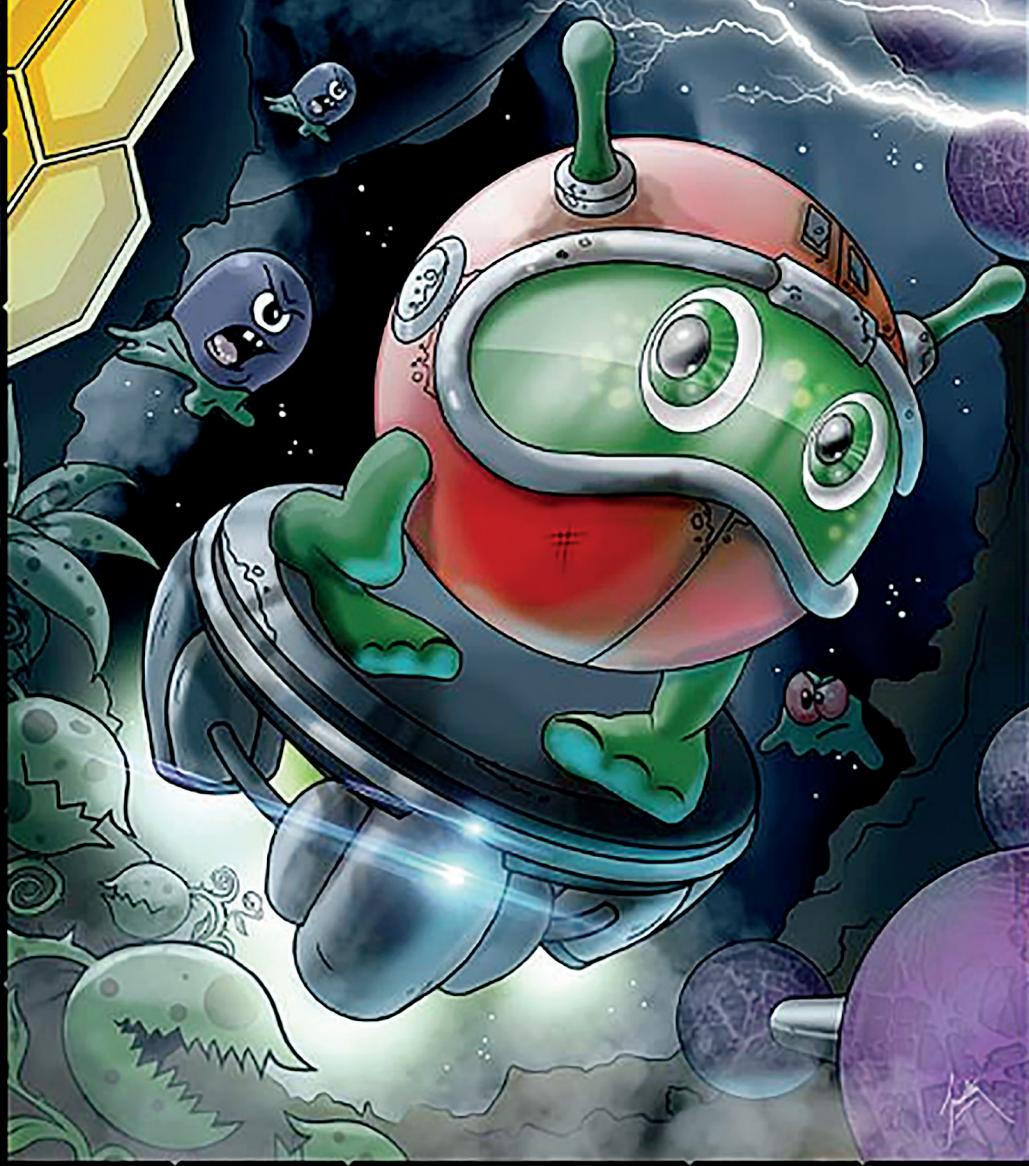
I don't have the official source code to the Atari ST versions of any games I've converted or I am in the process of converting. I have to use my hacking background to go into the program code and modify various elements until something eventually appears on screen.

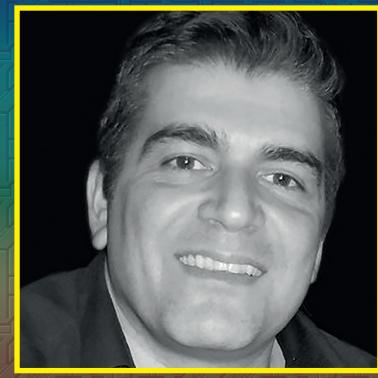
The main stumbling block to doing these conversions is the Atari ST display format, which is quite different from that of the Amiga.

Fortunately I have access to the talents of some other guys that help me try and make my conversions a touch more Amiga than a simple straight Atari ST conversion, whether it be a straight conversion of the music into Protracker format, or a more Amiga interpretation with nice sounding samples, or the graphic efforts to give the game an introduction sequence that it didn't originally have.

The work I have done on the likes of *When Time Stood Still*, *Ranarama* and *Starquake* has been made better by the talents of guys like ADRDesign, Hoffman, Greyfox, Predseda, Leathered, Estrayk, Mark R Jones and many more, just to add at least a touch of finesse to games that really should have had Amiga versions in the first place.

XARIAKE





Raffaele Cecco

Producing a string of hits on the ZX Spectrum including *Exolon* and *Stormlord*, Raff moved on to the Amiga and created arguably one of the best-looking games to play on the computer.

My first computer was a Sinclair ZX81, bought for me by my parents back in 1981. I'd been really fascinated by what I might be able to do with a computer after playing around with the Commodore PETs at school and playing coin-ops in the arcades, so I was keen on getting hold of a computer – any computer!

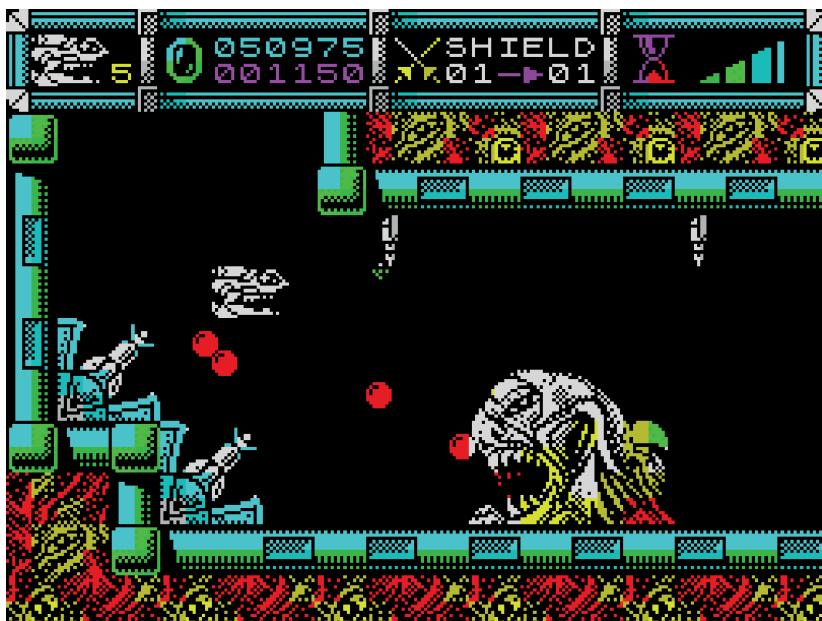
All the fancy American-made computers were way too expensive for me at the time, but the ZX81 was just £70 and, with a bit of cajoling, I

could get my parents to spring for one on my birthday. 'Please allow 28 days for delivery', the advert said, but the machine was so in demand, all I received on the delivery day was a letter from Sinclair asking me to wait another month! For a teenager, it was like waiting a lifetime.

When the machine finally arrived, I dived straight in and soon had a few very simple games working using the BASIC coding language – 'avoid the falling letters' type of thing. At the back of the manual there was a tantalising reference to something called machine code and I got the inkling there was something very special about being able to use it. That aspect was all a bit cryptic at the time, so I never dived into machine code until I obtained a Sinclair ZX Spectrum later.

I was already a professional games coder when I first encountered the Amiga around 1990. I'd already finished quite a few games on the ZX

Raff was a prolific Spectrum developer with a number of hit titles under his belt including *Cybernoid* below.



Spectrum such as *Exolon*, *Cybernoid* and *Stormlord*. I was working for Vivid Image having just finished a game called *Time Machine*. They had the seed of an idea for a platform beat 'em up called *First Samurai* (the name was a play on the *Last Ninja* series that the team had worked on previously). They wanted to develop it on this new-fangled machine called the Amiga.

I only created two games on the Amiga, *First Samurai* and *Second Samurai*. I wish I had coded more because the Amiga was brilliant, but consoles were calling, in the shape of the Sega Mega Drive and Super Nintendo. These machines had great capabilities too and were very popular. They stole some of the Amiga's thunder in terms of games.

Vivid wanted to develop *First Samurai* for the new Amiga computer and they already had some of the sprites and background graphics drawn. The graphics and animation looked great, and with the power of the new Amiga, I knew the game would look brilliant.

Coding for the Amiga was a real pleasure, all those colours, memory, great sound and the hardware blitter were a real luxury after years of being hampered by the limitations of 8-bit machines. The 16-bit 68000 CPU was also a very nice CPU with lots of registers and a consistent instruction set compared to the 8-Bit z80 of the ZX Spectrum.

I worked mostly alone on *First Samurai*, but Mev Dinc at Vivid Image



helped with ideas, and the graphics were mostly drawn by artist, Teoman Irmak. My ability to draw graphics had reached its peak with the 8-bit machines – you needed real artistic talent on the Amiga with all those colours and shading; beyond my capabilities.

First Samurai – Raff worked alone on the game with Mev Dinc contributing ideas.



As the title implies, *Second Samurai* was the sequel and it was as successful as the first.

The brilliant music was externally sourced, but I had a huge amount of fun creating the sound effects using the Amiga's sample playing abilities. It was amazing being able to do that after the



Spectrum. I went overboard and even put some sounds in as a bit of a joke such as loud orchestral stabs and even the Hallelujah Chorus. Mev at Vivid was suitably amused and they stayed in. The sound ended up being one of the most memorable aspects of the game.

Development took place on some sort of 68000 assembler on a PC hooked

up to the Amiga via a serial cable or some kind of setup like that. I wrote the code on the PC, compiled it, then sent it down to the Amiga to test.

The team at Vivid had created a clever sprite cutter that could extract the individual frames from the images – the sprites in *First Samurai* were typically composed of more than one rectangle so it wouldn't be drawing loads of empty space, which would be inefficient. I also remember having a custom map-editor for designing the levels.

I think *First Samurai* stood out because of several factors: it looked great; the sound was over-the-top and loud; the levels were sprawling; and there was some humour in there too. We had put a ton of work into it and it showed with loads of levels, enemies and bosses. The gameplay was quite involved too with lots of exploration and puzzle solving; this set it aside from a basic scrolling beat 'em up.

The Amiga was a ground-breaking machine, way ahead of its time. Its graphics and sound capabilities were awesome, it had a wonderful CPU that was easy to code, lots of memory and it looked cool too.

Computers like the Spectrum were great, but you always felt that lots of compromises had been made to keep their costs affordable. The Amiga felt like it had been designed with few compromises, and you knew that it would be possible to create real arcade quality games on it. 

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AMIGA



Archer Maclean

Having made an impact on the Commodore 64 with titles such as *Dropzone* and *International Karate*, Archer found further success on the Amiga with *International Karate +*, *Jimmy White's Snooker and Pool*.

I had an early start with computers as far back as 1976–78, first by building them on breadboards out of raw microprocessor chip families and then by making some early home brew kits (SC/MP 8-bit, Fairchild F8, 6800, Z80, Nascom1 and 2, Compukit-101 and others).

This was about four to five years before any software tools or third-party games were available. So, in those prehistoric days we had to blow 1k ROMs and write everything from scratch from bootstrap code onwards. It was all done with hex keypad entry byte by

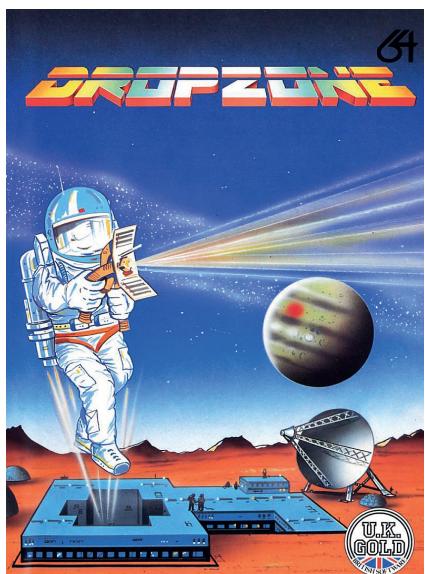
byte, and primitive monochrome character-set based text screens on a black and white television, and if you were lucky you could save your 500 byte program out to an audio cassette using a 300 baud audio coupler or dedicated cassette tape interface system.

I interfaced my

hardware up to various bits of external electronics to make it do really useful things like flash an LED or read data in from an 8-bit ADC and try and control stuff with DACs. At the time I was also into very early arcade games and was addicted to *Breakout* and *Space Invaders*, so naturally I tried to mimic these in machine code on my primitive Z80 system with its blocky black and white graphics.

In 1979–80 the Atari 800 burst onto the scene with games like *Star-Raiders*, and I was hooked on it right from the start because not only could it display colour bitmaps but it seemed to have additional magical graphical abilities that the lowly 1MHz 6502 processor could not have produced on its own. I immersed myself in the hardware bible that was *De Re Atari* and disappeared into a dark room for months to learn all its secrets and experiment with its unusual hardware, namely the chip set built around a programmable video processor called ANTIC and its family of TV and sound hardware control chips, freeing up the main 6502 microprocessor to get on

Below and opposite:
Archer's homage to the great horizontally scrolling arcade shoot 'em up game *Defender – Dropzone* on the Commodore 64.



with game code. This hardware gave the Atari 400/800 computers a distinct edge when it came to immersive games as they could do things other contemporary home computers couldn't get close to, such as smooth scrolling, player-missile-sprites, screen line interrupts, hardware collision detection and more.

I exploited all of these hardware abilities to make the scroll-fest shoot-em-up that became my first released game, *Dropzone*, in 1984. It was delayed from 1981 because I went off to university to do a degree in cybernetic electronic control systems. In 1985–86 I programmed the 8-bit *International Karate / IK1 / World Karate Championship* (USA) game on the Atari then the Commodore 64, followed in late 1987 by 8-bit versions of *IK+* with its key innovation of the third on-screen fighter and those bonus rounds.

Throughout the mid-1980s I often remembered a weird vivid dream I had had in about 1982, about snooker! It's best described as if I was looking down onto a snooker table that had a camera suspended by string from the overhead lighting canopy following balls around the table as they rolled. I think this was triggered off back then as snooker was big on TV with stars like Steve Davis, Ray Reardon and so on being regulars on *Pot Black* and numerous snooker tournaments covered for hours on TV.

After that dream I remember thinking long and hard about how to make a 3D snooker game work on an



8-bit Atari. But despite its graphic advantages at the time, it just wasn't going to happen due to its lack of maths ability, and what I had in mind needed an intense amount of maths as well as ball plotting with things like dynamic shadows.

In 1987 I bought an Atari ST with the intention of doing some sort of *Dropzone* upgrade, and also *IK+* conversion and enhancement. Initially I played around with all sorts of software and hardware for it, like a video grabber, sound effects editors, MIDI stuff and played loads of the new fangled 16-bit games. I also revisited my 3D snooker



International Karate + may have been a ten-fold improvement over the original C64 incarnation, but it left Archer all battered and bruised after the long hours spent developing the game.

dream, and started to get more and more drawn into code writing experiments just trying to squeeze the absolute maximum amount of machine code throughput on the 68000 by devising a pseudo ball plotting routine complete with fudged shadows. This was purely bitmap driven, using huge look-up tables and minimal maths. But I also started doing intensive experiments on how fast I could do a set of fixed point and floating point maths routines in 32 and 64 bits, all of which would eventually be used in what became *Jimmy White's Snooker* in 1991, although for years before launch I only ever called it '147'. From memory I realised overall that the 68k-based ST

"I continued to use an ST art program called NEochrome (sorry to all the Deluxe Paint fans out there)."

with its 32-bit data path, 8Mhz clock and hardware multiply/divide commands was twenty to forty times quicker than a 6502 Atari 800, depending on what you were trying to do.

Meanwhile, in 1987, I was contracted by Activision to produce an enhanced 16-bit version of *IK+* for the Amiga as the prime sales machine at the time, with the ST version as a runner up, and the snookery stuff had to be put on hold for a while. I promptly set about genning up on the Amiga hardware, carrying over much of the ST code experiments, and writing ever more complex demo code to produce fancy effects with the far more interesting Amiga graphics and sound hardware. I studied the hardware reference manuals at length and was amazed to find that the Amiga hardware seemed to be a 16-bit evolutionary development of the 8-bit Atari hardware, right down to some control registers having the same name, along with cutesy named chips looking after various chunks of hardware. It's only with hindsight that I now realise the common link was the hardware architect/chip designer, namely the late Jay Miner. As is now well documented, his hardware design 'template' arguably goes back to the mid-1970s with the Atari vcs TIA



chip, that then evolved into the Atari 8-bit family of ANTIC, CTIA, GTIA, POKEY, then the Amiga's Copper, Blitter, Agnus, Denise, Paula chips.

However, I was under commercial pressure to write games that sold to the biggest market segment at the time, so this meant I had to ensure any game code I developed had to run on a bog standard Atari ST with 512k of RAM, and the same for a base spec Amiga A500 without much time to devise Amiga specific routines.

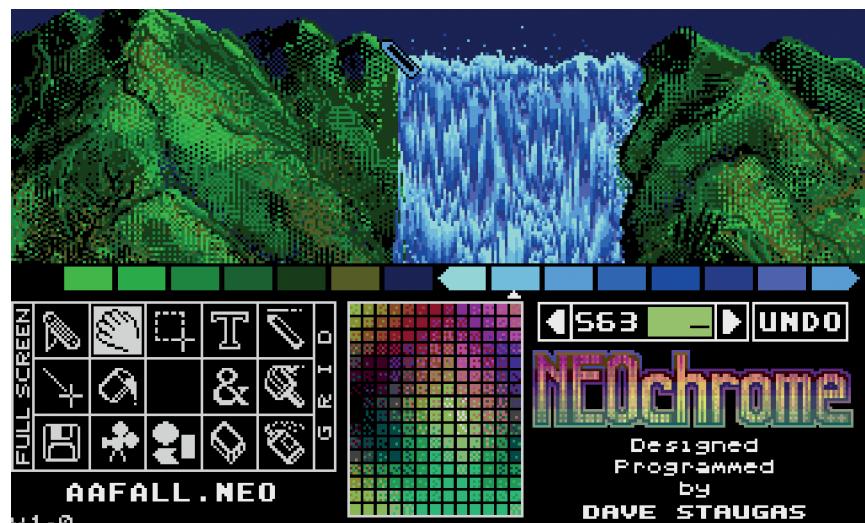
Being under pressure to deliver a game, I also didn't have much time to learn the range of software development tools for graphics and code, so to save time I continued to use an ST art program called *NEOchrome* (sorry to all the *Deluxe Paint* fans out there). *NEOchrome* was a surprisingly good art program, and also had a hidden animation facility activated by a bizarre right

mouse button click on a specific pixel within the control icon grid. It was buggy but predictable, but good enough for me to edit all of the *IK+* animation frames for the Amiga and ST.

I also didn't have the time to do a full re-write of *IK+* from 8-bit 6502 to 16/32 bit 68k, so I made use of the 68000's 'dot byte' mode and more or less did a line-for-line conversion from the 6502 code. Amazingly, it struggled to life in about four days of intense coding.

Once up and running, I spent six months rewriting chunks and adding

Atari ST graphics development tool
NEOchrome – just what's needed to produce great graphics on the Amiga.





Jimmy White's Whirlwind Snooker – Take too long deciding on the shot or cueing up and the balls can get rude.

loads of daft functionality. There are at least forty-five cheat keys in the Amiga version of *IK+*, for controlling everything from the sunset ripples to converting the entire speech bubble system into

German text, seriously! But I've only ever seen about twenty revealed on the Internet.

Code was initially written with *Devpac*, but I migrated to the amazingly fast *PDS* editor/assembler/debugger (Programmer Development System) written by two experienced game dev friends of mine, Andy Glaister and Foo Katan. The system was hosted on an early Dell pc running dos, and linked to the Amiga or ST via a parallel interface. It was amazingly fast, in that I could make a code change, then press a button and assemble/compile 60,000 lines of code and graphics and download it and then run it...in under five seconds. It massively enabled rapid code development. It also had excellent debugging tools, break points, memory interrogation/editing and so on, and I continued to use it right up until 1993.

The Amiga had far superior sound ability to the ST's somewhat primitive 4-bit AY-3-8910 that had its roots in the mid 1970s. The Amiga's Paula chip allowed for 8-bit samples and DMA data control freeing up the processor to do its thing. However, both machines only had 512k of RAM, and I always wanted to write games that loaded in one go, without resorting to disk loads at any point, so using memory hungry sampled sound was going to be a problem. However, I managed to get the extensive sound effects and samples for snooker used on the Amiga into about 80k. To make the applause and crowd effects



I used two sound channels playing a selection of much shorter samples, overlaid on each other and at different volumes and playback rates, to give the

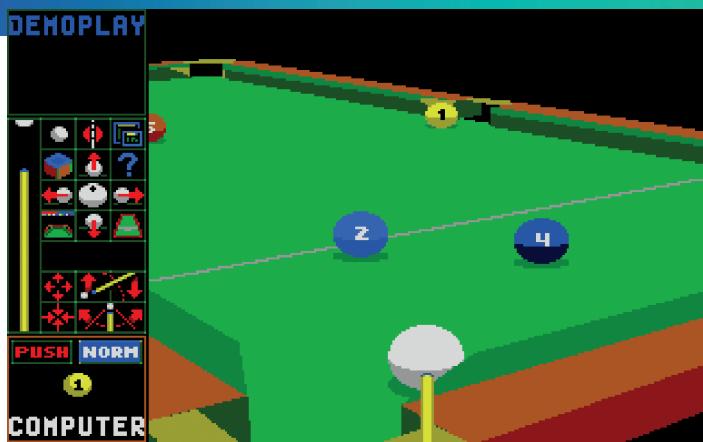


effect of a 20-second continuous sample played back at a variable rate like 10kHz or so. A continuous sample of the same duration would have used up something like 400k of data, whereas I had thirty or so effects and applause samples taking up just 80k total. I'm sure other

Top: programmer, cue
and balls, working
out the angles.

Centre: Archer with his first Ferrari and **below** a Virgin promotional shot with Jimmy White.

Left: a reunion with Jimmy ten years on, with Archer's second Ferrari.



Archer MacLean's Pool – Snooker with less balls.

games programmers resorted to similar techniques.

IK+ 16-bit went out through Activision in 1988 and straight to the number one spot, which was cool. But with various business-greed-legal arguments going on in the background it didn't stay there very long, which was not so cool (that's worthy of another article).

'147' evolved on and off during the course of 1989–91 in between various other life episodes as well as wasting months playing *Lemmings* and *Populous*. It was initially signed up to Activision again, and there was some early talk about getting Stephen Hendry to endorse it, but the publisher went belly-up in 1990 and I had to find another

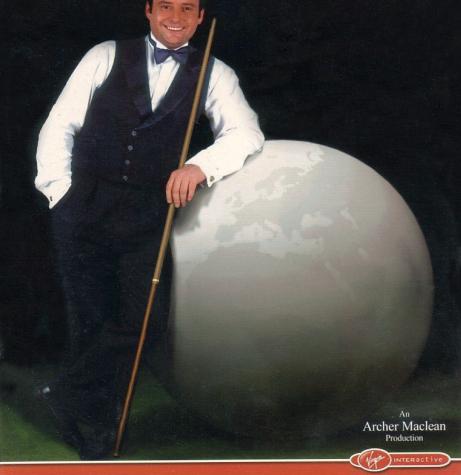
home for it. It eventually went out as *Jimmy White's Whirlwind Snooker* in September 1991, published by Virgin.

However, it was still called 147 right up until about June 1991. The change of name came about when it was being previewed at a London games show when a certain Jeremy Beadle walked past the Virgin stand with a phone stuck to his ear. He stopped, looked at the game doing its demo on a giant screen and promptly came over to say it played like Jimmy White. In the following discussion he said he could introduce us to Barry Hearn, Jimmy's then manager ... and the rest is history. The deal was done within a week, and we remain good friends to this day!

After *Jimmy White's Whirlwind Snooker* in 1991, I was then under pressure to adapt it into a pool game. So the functionality grew with three sets of pool rules added, a rule editor put in, tournament modes, *yadda yadda*, and loads more computer player profiles. With snooker there was only one set of rules and four computer players, Tom, Dick, Harry and Jimmy – whereas with pool it grew to twenty or so and all the names chosen related to people I knew at the time, a theme which continued into later games I did like *Jimmy White's 2: Cueball* (1998), *CueBall World* (2001) and even *Pool Paradise* (2004) to some extent. One memorable problem with the pool game was the lack of memory space and lack of processing power to make the pool ball numbers roll around the ball

PC CD-ROM

Jimmy White's Cueball World



An Archer Maclean Production
VIRGIN INTERACTIVE

image and be scalable, so they looked like they were skating on ice.

By 1993, I was under more commercial pressure to take the Amiga snooker code and somehow shoehorn it into the Sega Mega Drive with less RAM, its bottleneck video system, no keyboard, etc, and make it run in 3D just as fast as an Amiga, even though there were very few 3D games on that console! That was a major challenge but I managed it using what I now know to be called an MPEG-like compression technique, and then got approached by other games people to license the 3D engine. It was also the last program I ever completed entirely by myself, because by 1996 I was tempted with funding to set up a development studio... and in the fullness of time, the first team product was yet another Jimmy snooker game called *Cueball*, but this time in spectacular texture-mapped



3D detail making use of the hugely increased graphics abilities of 3Dfx cards on the pc and PlayStation 1.

I only ever did the three titles on the Amiga, and look back on it with a great deal of fondness. But I regret not really being able to do an Amiga-specific game which intentionally squeezed the most graphical performance out of the hardware in the same way I had done with *Dropzone* on the Atari 8-bit system. Happy days though!



Lining up a break in *Jimmy White's 2: Cueball* (1998) for Windows.

Meeting 'God' – Archer smiles in the presence of Nolan Bushnell.





Lutz Osterkorn

A founder member of German software developers Factor 3 – later to expand to Factor 5 – Lutz and the team produced some of the best-looking games on the Commodore Amiga, with *Turrican* being a firm favourite with fans to this very day.

Had it not been for the lack of decent games for our beloved Amiga we probably would never have started developing games and Factor 5 would never have existed.

The guys from our team had been friends since the days of the C64. In those days the male-dominated scene regularly met to copy, trade and sometimes hack games. Some of us used the machine for coding, others for gaming. In doing so I met a lot of like-

Left to right: Factor 3's founders Lutz Osterkorn, Achim Moller and Willi Bäcker seen at Gamescom 2016.

minded people and this was how we got to know each other.

When the Amiga was released in Germany we were all very eager to get one. Willi Bäcker from yet-to-be-founded Factor 3 (we started with three guys, hence the name) got the first Amiga A1000 you could buy in our hometown of Cologne and was allowed to borrow a couple of boxes of Amiga documentation from the retail store. This documentation was not available to regular customers – so theoretically we had a head start.

But we did not start coding our first game until one day in March 1987 when we – that is myself, Achim Moller and Willi Bäcker – drove three hundred kilometres to the CeBIT Computer Trade Show in Hannover where we hoped to see some new games for our software-starved Amiga. Sure, there had been a few nice games like *Marble Madness*, *Defender of the Crown* or *Skyfox*, but none of the arcade action games like for example *R-Type*, which we loved to play so much at that time.

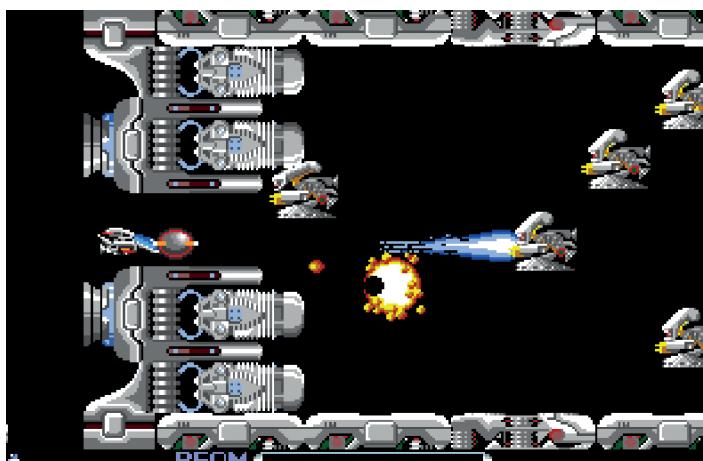
Sadly there was nothing on display



which came close and we almost left disillusioned and empty-handed until we stumbled across the booth of NEC Corporation. They were displaying the PC Engine [TurboGrafx-16 Entertainment SuperSystem] and it was running our favourite arcade game *R-Type* in an acrylic display case. That's the first time we ever saw the PC Engine and *R-Type* was so amazing. We tried to persuade the Japanese staff that they should sell it to us but communication wasn't easy and the booth staff finally made a gesture with their hands that they would have to commit seppuku if they returned without the machine. So we gave up – we didn't want anybody to commit suicide because of a video game.

But this inspired us and on our way back home we had the bold idea that we should develop our own shoot 'em up. This is how *Neutralizer* was born, though it got changed after a bit to *Katakis* and this original story even made it in the *Katakis* manual partially. In our search to sell our game to the highest bidder we later contacted Rainbow Arts and sealed a publishing deal with them.

However, because we borrowed too much content from our favourite *R-Type* Rainbow Arts was threatened with legal action by Activision, which in the meantime had acquired the publishing rights to *R-Type* from the Irem Corporation for various platforms. Activision proposed a deal to drop the lawsuit if Rainbow Arts would handle the Amiga conversion because they were



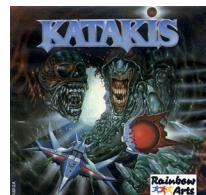
short on an Amiga development team. So Rainbow Arts asked us if we could do it.

It was so unreal. First we develop a game as an homage to our favourite arcade game and two years later we do the real thing, something of which we would never have dreamt. We were so enthusiastic about it.

By that time the team already had found its missing two original members – Holger Schmidt and Stefan Tsuparidis – so we changed the team's name to Factor 5.

Sadly, we were given only three

Top: *Katakis*, Factor 3's homage to *R-Type*, and, below it, their conversion of the arcade classic for the Amiga.



Factor 5 offices, Cologne in 2016: Willi Bäcker, Stefan Tsuparidis and Lutz Osterkorn.



Factor 5's conversion of *Turrican* for the Commodore Amiga. Right: avoiding the bazooka-wielding jumping enemy.



months' development time which didn't allow us to make the game as arcade-perfect as we would have liked.

To make matters worse we had almost no support by Activision or Irem, except for the graphics set for the Atari



ST version, which we would redraw anyway. This meant we had to code the game from scratch. The only reference we had were photos we'd taken of *R-Type* by visiting the local arcade while one of the guys played the game. To make the process less time consuming and more accurate in the development we finally bought an original *R-Type* arcade PCB for reference. During this time Julian Eggebrecht from Rainbow Arts joined the team as a producer and became a Factor 5 member and later a CEO.

After we finished *R-Type* Rainbow Arts asked us if we could handle the Amiga port of *Turrican*. This is how *Turrican* for Amiga, in close cooperation with its original creators Manfred Trenz and Andreas Escher, came to be.

We knew that the game turned out pretty well because everyone on the team loved playing it, however I don't think any of us could have imagined that almost thirty years later *Turrican* would still be such a fan favourite. 



Christopher John Payne

In the late 1980s and early 1990s when Chris was managing director at Europress Software he came up with the brand name Mandarin Software. He explains how *AMOS* The Creator on the Mandarin label unleashed the imagination of Amiga owners with a bent to make their own games and demos.

One day I was called into a meeting with Peter Holmes, who was employed to find new products for the Europress range of companies. He showed off *STOS BASIC* for the Atari ST, created by François Lionet, which had sold in low numbers in France, in some bland, blue-coloured packaging.

It was a **BASIC** programming language with a range of commands to move sprites around the screen, add music, and more. This made it ideal for creating games.

Peter and I looked at each other, and we knew what to do: market *STOS BASIC* as a games creation tool. I asked Project Manager Richard Vanner to design a couple of games to bundle with the product. We launched *STOS* onto the UK market, and it was a massive success.

Richard worked closely with François to create the Amiga version which we decided to call *AMOS – The Creator*. We launched it early in 1990 and it sold incredibly well, and led to thousands of



A sophisticated development language with more than 500 commands, *AMOS – The Creator* returned game creation to the back bedroom programmer.

Amiga owners learning to program.

According to one magazine article at the time, '*AMOS* has more support than any language I've ever seen.'

There is an *AMOS* PD disk collection (over three hundred disks!) in Europe, and a separate one in Australia.'

We went on to publish *AMOS Compiler*, *AMOS Professional*, *Easy AMOS* – and *AMOS 3D*, created by a company called Voodoo Software in Oxford.

Richard Vanner later set up The Games Creators with Lee Bamber and published *Dark Basic* for PC. François Lionet went on to set up ClickTeam, and create *The Game Factory 2*, *Multimedia Fusion 2* and more for PC. I created a mail order business called LifeTools, selling personal development products, and now teach coaches, trainers and consultants to make money using online courses.



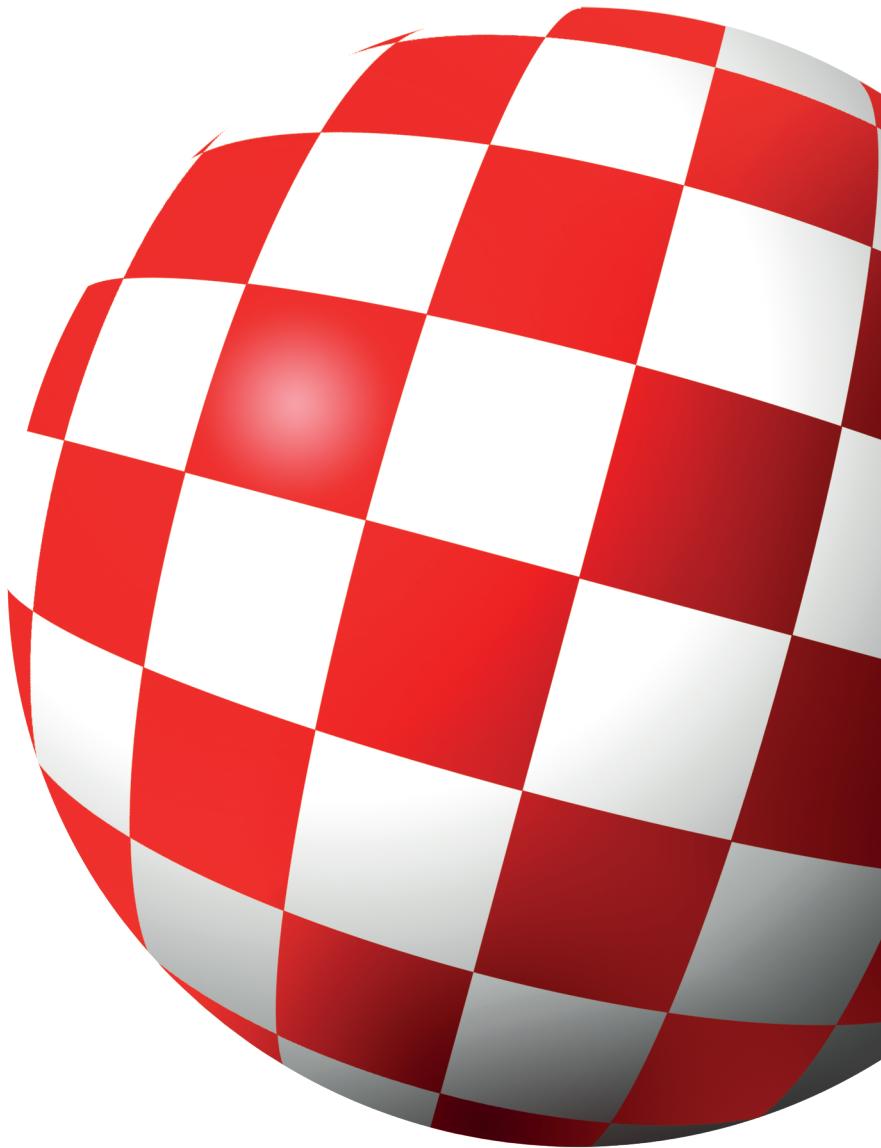
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Adrian Liechti	Andrew Lockhart	Bill Bradford	Chris Baker	Craig Worthington	David Klco
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Eero Rantanen	Gabriele	Hayesmaker	James Stephen Roberts	Joël Fuchs	Jürgen 'Weasel' Brunner
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Finn Renard	Contestabile	Ian Price	Jason Robertson	Jon Tracker	Kicklix (Kickstart
FixedFantasy	Giovanni Cardona	Ian Schmidt	Jason Stewart	Jonas Jacobsson	Linux)
Flemming Dupont	Giovanni Pecenco	Ignacio Burgueño	Jason Warnes	Jonas Larsson	KickNiaow
Florian	Glen Fraser	Iñaki Martínez Diez	Javier Poves de la Rosa	Jonas Rosland	Kim
Florian 'sYntiq' Mehnert	Glen McNamee	Ingo Devooght	Jay Loring	Jonathan Bentley	Kim André Sand
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Sean Higgins		Tim Berry	Vlado Banda - Bonefish	



'First the screen filled with red, yellow and blue triangles that twisted and turned, creating patches of shaded colors. Next a pie chart of aqua, purple, fuschia, green yellow and white sprang onto the screen. Then there was a futuristic street scene, complete with a figure walking a dog and a fire hydrant that constantly changed shapes. Finally a red-and-white-striped ball began to bounce, the sound changing and echoing as it bounced to different heights.'

So it was written in *The New York Times* on 29 August 1984, marking the start of a revolution in colour, animation, processing power and sheer excitement. The Amiga debuted, and for a few years was the most desirable of all home computers. Even when US Commodore's poor management ended its reign, the Amiga refused to die and lives today through the enthusiasm of gamers and former demoscene adherents. This book charts the Amiga's history, looks at the best of its games and reveals the memories of those involved in the rise, fall and resurgence of the "first aesthetically satisfying personal computer."†

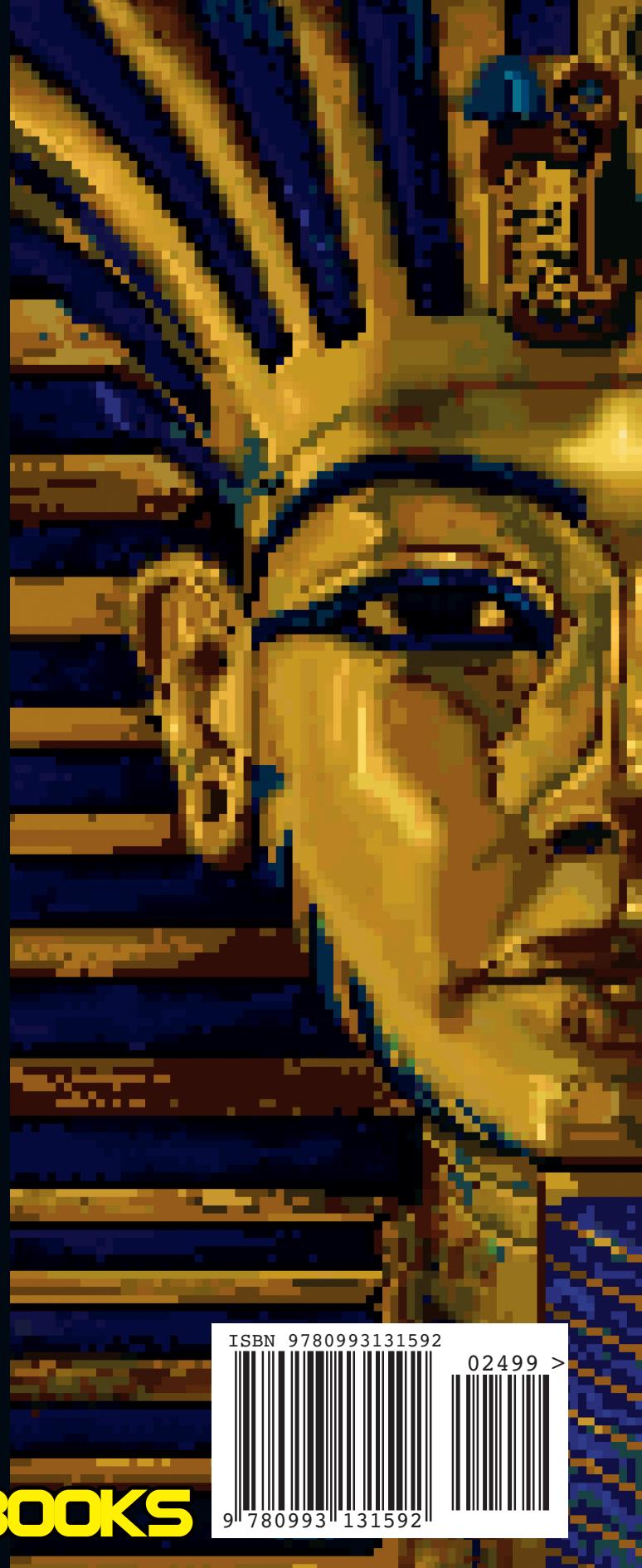
† Jimmy Maher

The Future Was Here: The Commodore Amiga, 2012



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